

# NETWORKWORLD

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STRATEGIES AND TECHNOLOGIES FOR OPTIMIZING IT

## CUTTING THROUGH THE CLOUD

A comprehensive guide to evaluating  
cloud computing services. **PAGE 18**



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# Microsoft's software pipeline filled

BY JOHN FONTANA

LOS ANGELES — If there was one revelation at last week's Microsoft TechEd conference it was that the company's product pipeline is stuffed with software timed for release in the next seven to 12 months that will force corporate IT to deftly plan and strategize how it wants to deal with the onslaught.

Four of Microsoft's major platforms are queued up to be released near the end of 2009 or early 2010.

Windows 7, Windows Server 2008 R2 and Exchange 2010 are all slated to ship by year-end, as is the company's new identity federation platform, Geneva.

On the heels of all that is another revamped flagship Microsoft platform — Office 2010, which is slated to ship early in 2010 and includes the wildly popular SharePoint Server.

5.18.09

## NETWORKWORLD

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■ **CONTACT** Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002; Phone: (508) 766-5301; E-mail: [nwnews@nww.com](mailto:nwnews@nww.com); ■ **REPRINTS:** (717) 399-1900; ■ **SUBSCRIPTIONS:** Phone 877-701-2228; E-mail: [nww@omeda.com](mailto:nww@omeda.com); URL: [www.subscribenww.com](http://www.subscribenww.com)

Behind that heavy-hitter lineup of software, each one individually capable of providing IT with an upgrade cycle that extends well past 12 months, is a new version of SQL Server and an appliance version of the database for massively parallel processing that will come in the first half of 2010.

Users trying to make sense of it all can add to the mix a handful of code-named projects that includes new Application Server technology for Internet Information Server (Dublin); a client console for Forefront security software (Stirling); a distributed cache system for clustering technology (Velocity); and a componentized version of Windows Embedded for devices (Quebec). All that software will be available in late 2009 and throughout 2010.

Last week's TechEd agenda was jammed with sessions centered on no fewer than 10 code-named future products.

"In the tech sector there is a lot of planning and strategy going on," said Karen Hobert, principal analyst at Top Dog consulting. "When the dust settles, people may strategize around all this and figure out how to balance cost with operational innovation."

Hobert said the economy is forcing CIOs to take a collective inhale and a wait-and-see attitude. She says IT is doing more strategy and planning these days because gaffes are difficult to overcome.

The Department of Labor's February jobs report statistics show some evidence of that thinking. Technical consulting jobs were up nearly 3% in February 2009 as compared with the same month in 2008.

Other evidence is coming directly, and

loudly, from Microsoft, which is offering planning advice that has never been clearer.

At TechEd, keynote presenter Bill Veghte, senior vice president for the Windows business, said companies testing Vista should stop and move to testing Windows 7. The same advice was repeated for users who have not yet moved to Exchange 2007; they were told to skip it and wait for 2010.

The advice is a marked change from Microsoft's typical straddling act in which users are rarely publicly encouraged to abandon one upgrade plan for the impending release of the new version of a product.

"[Microsoft] is being brutally honest," Top Dog's Hobert said.

Users who have sifted through the haze say a strong focus is needed going forward.

John Ritter, IT manager in the School of Business at the University of Vermont, said the school is actively testing Windows 7 in its lab.

"We want to leverage XP Mode for a financial services app we have that doesn't run on Vista," he said, noting that Windows 7 solves a need the school has now.

There are also plans to roll out Windows Server 2008 R2 to take advantage of new group policy features that will help with power management and cost cutting.

And he said Exchange 2010 is under the microscope because users won't have a migration option and will be forced to do more difficult upgrades when moving from Exchange 2007.

The same issue was on the top of the list for another IT manager from a state government agency who asked that his name not

**See Tech Ed, page 14**

### Development pipeline

Microsoft's product pipeline is stuffed with major releases and technology upgrades that will gush forth with new products in the next 8 to 12 months.

Software	Description	Availability
Windows 7	Vista done right?	Fourth quarter 2009
Windows Server 2008 R2	Bring on Live Migration	Fourth quarter 2009
Office 2010	Invite beta in July	First half 2010
Exchange 2010	Built-in archive, new admin. tools	End of year
Geneva	Federation identity platform	End of year
Kilimanjaro	New version of SQL Server	First half of 2010
Gemini	New BI technology planned for Kilimanjaro	First half of 2010
Madison	Massively parallel processing (MPP) data warehouse	August
Dublin	App Server extension to Windows Server	Unannounced
Stirling	Central client for Forefront security software	Early 2010
Oslo	Tools to build model-driven apps	Unannounced
Velocity	Distributed caching platform for clusters	Mid-2009
Quebec	A componentized version of Windows Embedded for use in devices	2010



## PEERSAY

### The Internet is alive and well

Re: The Internet sky really is falling (<http://tinyurl.com/chxelv>):

Despite Johna Till Johnson's assertion that "IP itself is nearing end-of-life, with no ready alternative", your readers should be assured that the Internet Protocol is in no danger of reaching the end of its life.

While it is true that the long-anticipated end of never-previously-assigned IPv4 addresses is expected in the next few years, that will not cause the cessation of the Internet.

IPv4 will be with us for years or even decades to come. In the meantime, IPv6 is already being deployed and used, and there is significant effort underway to spread the deployment. In fact, a recent

Internet Society survey (report available at [www.isoc.org/ipv6](http://www.isoc.org/ipv6)) made it clear that network operators and enterprises of every size are paying serious attention to IPv6.

The Internet has faced significant challenges in address space availability before, and it has "routed around" expected imminent collapse due to core congestion issues as long ago as the mid-1990s.

*Leslie Daigle,  
Chief Internet Technology Officer  
Internet Society*

### The scary side of security

Re: Inside a data leak audit (<http://tinyurl.com/pngmwq>):

The things I come across from time to time are similar to what was in this story. So here is a scary one for you. We'd been tasked to perform a red team assessment on a Department of Defense contractor out of Hartford who had a Chevy Tahoe equipped with all nifty gadgets, tunneling, crypto, etc., that had connectivity to their offices in Hartford right back into a five-sided building in Washington, D.C.

After mutual [nondisclosure agreement] signing, laying out the testing framework and so on, one of the senior analysts at the contractor needed to access his VPN from our office to his laptop in the truck, but he couldn't since we

were using [network-access control]. We had immediate access to his Tahoe, which in turn gave us access to his offices in D.C., which made them very panicky.

The public can never see some of the scarier side of security, but it's nice to know once in a while we can read articles such as yours.

*J. Oquendo*

### Twitter is no Google

Hey Google, did you just feel the floor shake? (<http://tinyurl.com/ramasf>):

Unless the Internet community decides it wants to search the 'Net for inane, meaningless information ("What did the world eat for breakfast today?") rather than for things that matter, there is no way that

Twitter will ever compete with Google. Twitter is a flash-in-the-pan application enjoyed by people with nothing better to do with their lives than waste time. If Twitter survives the next five years, I'll be very surprised.

*Anon*

### Pay again for Microsoft's mistake?

Microsoft: corporate Vista testers should switch to Win 7 RC (<http://tinyurl.com/ogyznu>):

Given this obvious and foreseeable conclusion by Microsoft, the correct upgrade/migration strategy for Microsoft to embrace to regain/retain customers, would be to provide free upgrades to people and organizations who purchased into and endured the Vista debacle. By all reasonable thought processes, Windows 7 is the necessary Service Pack 2 for Windows Vista, not an opportunity to further gouge customers.

*Anon*

*E-mail letters to [jdix@nww.com](mailto:jdix@nww.com) or send them to John Dix, editor in chief, Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002. Please include phone number and address for verification*

# NETWORKWORLD

CEO: MIKE FRIEDENBERG  
EXECUTIVE VICE PRESIDENT/GENERAL MANAGER: JOHN GALLANT  
EDITOR IN CHIEF: JOHN DIX

## NEWS

ONLINE EXECUTIVE EDITOR, NEWS: BOB BROWN  
ONLINE NEWS EDITOR: MICHAEL COONEY  
ONLINE NEWS EDITOR: PAUL MCNAMARA  
ONLINE ASSOCIATE NEWS EDITOR: ANN BEDNARZ (612) 926-0470

## NET INFRASTRUCTURE

SENIOR EDITOR: JOHN COX (978) 834-0554  
SENIOR EDITOR: TIM GREENE  
SENIOR EDITOR: ELLEN MESSMER (941) 792-1061  
MANAGING EDITOR: JIM DUFFY (716) 655-0103

## ENTERPRISE COMPUTING

SENIOR EDITOR: JOHN FONTANA (303) 377-9057  
SENIOR WRITER: JON BRODKIN

## APPLICATION SERVICES

NATIONAL CORRESPONDENT: CAROLYN DUFFY MARSAN,  
(317) 566-0845  
SENIOR EDITOR: DENISE DUBIE

## SERVICE PROVIDERS

SENIOR WRITER: BRAD REED

## PRINT LAYOUT/WEB PRODUCTION

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COPY CHIEF: TAMMY O'KEEFE

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EXECUTIVE FEATURES EDITOR: NEAL WEINBERG

## CLEAR CHOICE TESTS

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LAB ALLIANCE PARTNERS: JOEL SNYDER, Opus One; JOHN BASS, Centennial Networking Labs; BARRY NANCE, independent consultant; THOMAS POWELL, PINT; Miercom; THOMAS HENDERSON, ExtremeLabs; TRAVIS BERKLEY, University of Kansas; DAVID NEWMAN, Network Test; JAMES GASKIN, Gaskin Computing Services; CRAIG MATHIAS, FarPoint Group  
CONTRIBUTING EDITORS: DANIEL BRIERE, MARK GIBBS, JAMES KOBIELUS, MARK MILLER

## NETWORKWORLD.COM

SITE EDITOR: JEFF CARUSO, (631) 584-5829  
COMMUNITY EDITOR: JULIE BORT (970) 482-6454  
PROGRAM DIRECTOR: KEITH SHAW, (508) 766-5444  
ASSOCIATE ONLINE EDITOR: SHERYL HODGE  
DIRECTOR OF USER EXPERIENCE & INFORMATION ARCHITECTURE: VALESKA O'LEARY  
CREATIVE LEAD: ZACH SULLIVAN

EDITORIAL OPERATIONS MANAGER: CHERYL CRIVELLO  
OFFICE MANAGER, EDITORIAL: PAT JOSEFEK  
MAIN PHONE: (508) 766-5301  
E-MAIL: [first\\_name\\_last\\_name@nww.com](mailto:first_name_last_name@nww.com)

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# BLOGOSPHERE

■ **Poster on Chinese forum leaks next-gen iPhone specs.** *Network World's* blogger Yoni Heisler stirred up the Apple rumor mill in reporting on a forum poster on a Chinese Apple Web site recently publishing what appear to be the specs for Apple's upcoming iPhone model. If accurate, the next iPhone model should be a lot snappier. Overall, the above specifications are impressive, but realistic enough to be considered credible — though the inclusion of an FM radio doesn't really seem like something Apple would feature. Nonetheless, the upcoming iPhone looks to be a significant upgrade from the 3G model, and lucky for us, Apple's WWDC is only a few weeks away.

<http://tinyurl.com/pr86pl>

■ **Cisco: virtualization is homeward bound.** *Network World's* Cisco Subnet reports that during Cisco's third quarter conference call last week, CEO John Chambers talked about Cisco's intention of bringing virtualization all the way from the data center into the home. First of all, what is a virtualized home and why would we want it? Colin Dixon, broadband media practice manager at market tracker The Diffusion Group, has an interesting take on this in his blog. Dixon describes home virtualization as "having" something — like a movie or book — in your possession when it's not physically in your home. It's not the location of the book or movie that matters, just that you have access to it. Cisco has made its appetite for consumer and home digital networking and entertainment no secret. The recent launch of the Linksys Home Media Hub lets the company play in the next multibillion-dollar opportunity.

<http://tinyurl.com/poj732>

■ **Google shows off big enterprise wins.** *Network World's* Google Subnet notes that it's been a big month for Google in the enterprise. Not only did it just sign on its biggest Apps customer to date (30,000-seats at auto parts supplier Valeo), but it also convinced kitchen appliance maker Hamilton Beach to dump Lotus Notes/Domino in favor of Apps in the cloud. It's been a while since Google's been able to convince a key enterprise customer — and a household name at that — to not only make the switch to Apps but to talk about it publicly as well. It's good news for Google and its PR team. And it will be interesting to see if the company can capitalize on the wins and start making true inroads in the enterprise. <http://tinyurl.com/q9vqf5>

INTERVIEWS, THE COOLEST TOOLS AND MORE

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## Robots improve efficiency at Thai hospital

Despite a hefty price tag, the hospital views robots as essential in helping reducing human errors.

<http://tinyurl.com/qovcul>

IDG NEWS WIRE:



## Europe fines Intel \$1.4 billion for antitrust violations

The European Commission has fined Intel about \$1.4 billion for violating European antitrust rules.

<http://tinyurl.com/q2gws8>

PANORAMA PODCAST:



## Five IT projects for the recovery

Dean Goodermote, CEO of Double Take Software, chats with Keith Shaw about five areas that IT departments should focus their attention on.

<http://tinyurl.com/qcrzfe>

## BEST OF NWW'S NEWSLETTERS

# Who will check the security of cloud providers?

**Cloud security:** The most basic facts about your data — such as where it is exactly and how it is replicated — become difficult to find out when you entrust it to a cloud, a new study says. While that's not surprising, the implications are large, according to the Forrester Research report "How Secure is Your Cloud?" by analyst Chenxi Wang. Submitting data to a cloud provider means it is stored and manipulated in an environment shared with other customers, and while that doesn't necessarily mean its security and privacy are in jeopardy, it does mean customers have to use diligence, she says. If security is not properly addressed, potential business and legal liabilities begin to mount. One key precaution Wang recommends customers take is encryption of the data not only as it moves around in the cloud and out to customers but also as it sits in databases. Cloud providers may address this on their own as part of their best practices, but it is up to the customer to evaluate whether it is sufficient.

<http://tinyurl.com/otwswv>

**Network architecture:** Outside Nortel, the scene is one of press and analysts glancing

frequently and impatiently at their watches. Inside, Nortel says it's tearing itself to pieces. And then there are the vultures — other companies, from Avaya to Siemens, that have been reported to be shopping for a piece of Nortel in the expectation that they'll get themselves a networking company at a bargain price. So what's taking so long? Nortel filed for bankruptcy protection four months ago. <http://tinyurl.com/q4yau9>

**Web Applications:** Over the last few weeks I've written extensively about social media, what you need to do corporately to get in the swim, and how to behave once you've got your feet wet. This week I want to talk about what not to do. Here is one thing I strongly suggest you don't do with social media: Don't neglect "traditional" forms of market communications (paper advertising, Web advertising, newsletter and so on) in favor of social media. Social media may be compelling but its value is largely unproven. Look upon social media as an opportunity with great potential. Is it a cornerstone of your market communications? Yes. Is it the foundation? No (at least, not yet). <http://tinyurl.com/pkod7n>





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# McAfee to acquire Solidcore Systems

**M**cAfee plans to acquire Solidcore Systems for about \$33 million in cash and an additional \$14 million if certain performance targets are met. McAfee's interest centers on Solidcore's whitelisting technology, which can control the applications allowed to run on a computer. Solidcore's products today are used on more than 200,000 endpoints, which include ATMs, point-of-sale systems, mobile devices, servers and workstations. After the acquisition is completed, McAfee expects to bring Solidcore's whitelisting and compliance-enforcement tools under the umbrella of the McAfee ePolicy Orchestrator management console. <http://tinyurl.com/qog6zm>

**Cisco supplying WiMAX gear to Clearwire.** Clearwire has selected Cisco to supply equipment for its 4G mobile WiMAX network buildout. The deal appears to be Cisco's biggest WiMAX win, though terms weren't disclosed. Under the multiyear agreement, Cisco also will develop mobile WiMAX/Wi-Fi devices for users that extend its Linksys line of consumer routers. The devices, expected later this year for the CLEAR 4G mobile WiMAX service, will be marketed to consumers, small office/home office, and small-to-midsize business users. Clearwire provides mobile WiMAX services in Baltimore and Portland, Ore., and plans to bring its CLEAR 4G service to more than 120 million users in 80 markets across the United States by the end of 2010. <http://tinyurl.com/rch3yk>

**IBM touts 'stream computing' for real-time data analysis.** IBM is bringing "stream computing" to the IT industry with software that analyzes thousands of simultaneous data streams to help businesses solve their most challenging problems. Stemming from seven years of development and technology from more than 100 IBM patent filings, stream computing is moving out of the prototype stage and into the commercial market with an offering called System S, IBM says. The technology takes a fundamentally different approach to business analytics by analyzing data in continuously updated streams of information from multiple sources, rather than static files preloaded into a data warehouse. System S chief scientist Nagui Halim says the software is designed for clusters of commodity Linux servers. List price is about \$400,000, but prices can range from \$100,000 to \$1 million, depending on the size of the system, Halim says. <http://tinyurl.com/qtd92y>

**Oracle buys Virtual Iron.** Oracle is continuing its spending spree with an agreement to buy Virtual Iron, an acquisition that will help Oracle enhance its Xen-based server virtualization software. The combination of Oracle's

VM hypervisor and Virtual Iron's technology will help customers optimize capacity utilization with more dynamic resource management; reduce server power consumption with automated power management tools; and provide deeper insight into server performance and utilization, according to Oracle. Virtual Iron's server virtualization management platform will become part of the Oracle VM and Oracle Enterprise Manager product lines. The acquisition is expected to close this summer. Financial details were not disclosed. <http://tinyurl.com/prdxye>

**NSF wants \$7 billion to fund cybersecurity research and more.** The National Science Foundation is looking to spend a good chunk of its proposed \$7.045 billion budget for the 2010 fiscal year on advanced network technologies. The overall budget would be an 8.5% increase over 2009 and would include \$1.1 billion devoted to Networking and Information Technology R&D, or NITRD, which coordinates network and IT investments across agencies.

Also on the IT front, the NSF is looking to commit \$46.7 million to accelerate innovation in silicon technology, which is on pace to reach the limits of Moore's Law in 10 to 20 years. Funding in part would go toward establishing partnerships with commercial entities and national labs. Cybersecurity research would get \$126.7 million, with an emphasis on usability and privacy. NSF also is earmarking \$92 million across research divisions to do transformative research — high-risk work that could have a big payoff. The requested budget will put the agency on a path to doubling its budget from FY 2006 to FY 2016, as envisioned in the President's Plan for Science and Innovation. <http://tinyurl.com/qppc7h>



**Too much experience could be hurting your IT job search.** IT professionals with more than five years experience on the job could have a more difficult time finding work during the recession than those with less experience, according to research from online career resource Beyond.com. The IT industry made up 11% of online job postings in the first quarter, second only to healthcare and medical at 23%, according to Beyond.com. But the number of IT pros looking for work might not be considered a fit for the open positions. The research shows that 79% of the IT candidates posting resumes online had five or more years of experience, while the majority of online job postings were for candidates with less than one year of experience (59%). In addition, the data revealed a 55% increase in the number of IT professionals searching for a job vs. during the same period a year ago.

<http://tinyurl.com/o3mgb4>

**Aruba unveils low-priced WLAN gear.** Aruba Networks showed off a new family of low-priced wireless LAN access points and controllers designed for fast setup and easy management at branch offices, teleworkers' home offices and small businesses. Aruba used existing consumer products available from a contract manufacturer and added new software, including an integrated firewall, to download and enforce enterprise-grade security and management policies. This strategy means Aruba could price the gear aggressively: One access point model for one to five users is \$99, while another model that supports as many as 50 users and includes 802.11n is \$395. "No one has an enterprise-class access point at \$99 list," says Paul DeBeasi, a senior analyst at Burton Group. "If you're looking at deploying three or four thousand branch offices, \$400 per access versus \$99 is a huge difference."

<http://tinyurl.com/pxj2nb>

**HP recalls 70,000 laptop batteries.** HP has recalled Lithium-Ion batteries used in some of its laptops, as they pose a fire hazard, the U.S. Consumer Product Safety Commission said last week. The recall covers about 70,000 batteries used in the company's HP and Compaq-branded laptops. The recall follows two reports of batteries that overheated and ruptured, resulting in fire that caused minor property damage. The laptops were sold in computer and electronics stores in the United States and HP online stores between August 2007 and March 2008. The battery packs also were sold separately. The batteries were made in China, according to CPSC, but the name of the manufacturer of the batteries was not disclosed. <http://tinyurl.com/r75e3o>



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## CASE STUDY

### Team Mindwave:

UC Solution Enables Research Team to Collaborate Anytime, Anywhere

#### Jason Snook, IT Director

MINDWAVE RESEARCH INC.

Mindwave Research is a small-to-medium size business, based in Austin, Texas, that provides full-service research. Snook joined in 2006 as IT director. He specializes in commonsense technology solutions and has a broad skill set ranging from security to unified communications.

Unified communications enables Mindwave's employees to collaborate from anywhere, says Snook. But it's the flexibility and cost savings, he explains here, that made his decision to "unify" his communications incredibly easy.

#### Why is unified communications important to Mindwave?

The ability to work collaboratively on client research projects regardless of physical location is huge. We leverage the brightest intellectuals, who are in great demand and highly dispersed—some travel, some work from home, and others use our "hoteling" office, which provides temporary workstations as needs arise. The ability to always have the proper toolset in front of us no matter where we are is absolutely necessary. Before unified communications, it was email and phone calls. But if you're in China, email can be problematic and phone calls expensive. Unified communications relieves those burdens.

#### What challenges did your previous communications platform present?

The greatest challenge was that we had completely separate systems supported by separate staff. It was a struggle to maintain everything—email messaging, voicemail and phone communications. Because we had to hire someone

to make changes or physically move phones, we also lacked flexibility. The Avaya unified communications solution brought all of that support together in-house.

#### What UC features did you deploy?

We use capabilities like twinning external phones with our office extensions, controlling phones from our PCs, porting voicemail to email, and conferencing. With these features we can always take calls, while clients on the other end don't know they've been routed to a cell phone or back to a desk phone. And whether in New York or Oregon, our home-based staff can dial into a conference or call a client using our Austin phone number.

#### What business benefits did Mindwave derive?

Creating the perception that we are always at this Austin number was a big win. What's more, we've seen improved productivity. With this integrated workstation at our fingertips, things are faster and it's easier to place and receive calls. The conferencing capability is also beneficial. We can schedule bridges without paying per minute, so we cut costs and use conferencing more. Additionally, our hoteling office staff can plug in their PCs and phones from any

temporary workstation, so we save a lot in real estate.

#### What cost savings did you realize from the UC solution?

We are able to get detail around two areas of savings: savings from real estate of \$8,000 to \$8,500 per month, and savings from outsourced support of \$500 to \$700 per month. It's one of the biggest no-brainers.

#### Do you have a vision for Mindwave's future using UC?

Mindwave is heading in the direction of making our phones secondary to our laptops by enabling those laptops with tools to check availability and actually place calls via the laptop. And with even more flexibility, I can see, for example, handing out a business card with one contact number, knowing that people will always reach me at that number. Now that's compelling.

For more information go to:  
[www.networkworld.com/  
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# Web-hosting firms defy recession

## Outsourced data center services enjoy rising demand

BY CAROLYN DUFFY MARSAN

After the dot-com bubble burst in 2001, mothballed data centers operated by bankrupt companies such as Exodus and PSINet were the most visible signs of the IT-driven downturn. Today, despite the worst recession in 50 years, Web hosting is one of the few thriving segments of the IT industry.

Web-hosting firms have seen growing demand for services ranging from simple shared hosting and collocation to managed hosting, virtualization and cloud computing. Companies benefitting from the trend include Digital Realty Trust, Equinix, Internap and Savvis — all of which reported revenue increases in the first quarter of 2009.

"The economic crunch we are all facing is forcing folks to be more creative and more open minded about how they deploy their businesses," says Michael Foust, CEO of Digital Realty Trust, a San Francisco owner and operator of Internet data center facilities that has seen its revenues grow more than 30% in a year.

Gartner is predicting continued growth for all aspects of Web hosting during the next five years, with overall revenues expected to rise from \$14.9 billion in 2008 to just shy of \$29 billion in 2012. "The economic downturn has really restricted enterprise access to capital," says Linda Leong, research director for Internet Infrastructure Services at Gartner. "Enterprises that were previously looking at building a data center are either taking a lease from a company like Digital Realty or going co-lo."

Leong says the overall Web-hosting market is growing at double-digit rates despite the recession. "Most companies across this entire market are doing well," she says.

Web-hosting firms continue to build new data centers, although at a slower pace than a few years ago. For example, Digital Realty is building 400,000 square feet of new data center space in 2009, compared with 600,000 square feet last year.

"What this allows us to do is take more of a just-in-time approach instead of building out speculatively," Foust says. "There's a lot of expansion by all of the players, but it's a more rational approach based on real customer demand. The smart folks are not doing build-it-and-they-

will-come."

New data center space is selling out quickly. Equinix announced May 5 that it had completed an \$82 million expansion of its Secaucus, N.J., data center, with 50% of the space booked or reserved by customers on opening day.

"We're already looking at phase three of that expansion," says Jason Starr, senior director of investor relations at Equinix.

"I don't think this shift is temporary," Foust says. "We've seen a continued growing demand for data centers and growing acceptance of our solutions."

Most enterprises are buying Web-hosting services as a cost-saving move. Outsourcing allows them to reduce their capital spending on data center floor space, servers and network equipment and replace it with a monthly operational expense.

"The value proposition of managed outsourcing is growing," says Bryan Doerr, CTO at Savvis. "That's combining with the cost-cutting pressures that many companies are experiencing as a result of the economic downturn. These two things are coming together to overcome some of the historical resistance to adopting outsourcing."

### Customer feedback

Cost savings is what prompted Availity to select Savvis as its managed Web-hosting provider in 2008. Previously, the healthcare SaaS provider used IBM's data centers. Availity hosts its application — which is used by 50,000 healthcare providers — at Savvis data centers in Dallas and Atlanta.

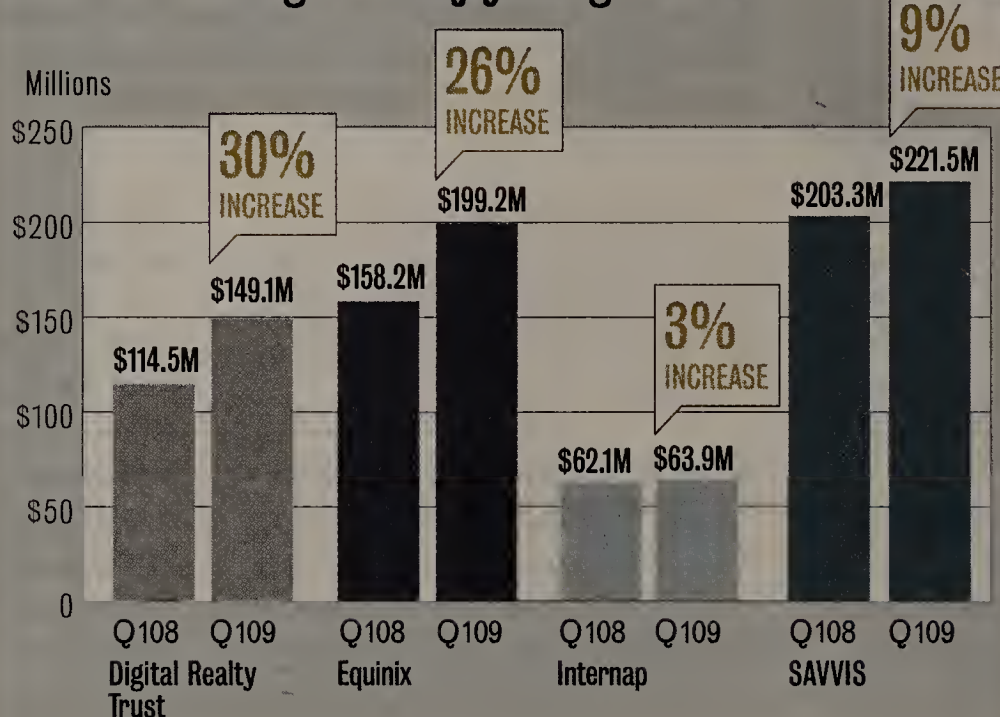
It's so critical to be up all the time when you have an Internet-facing portal application like ours," explains Jon McBride, CIO of Availity. "If you look at the cost of building a first-class data center that will be millions of dollars, and that's not our core business or our core strength. We were looking for someone to take care of all the pipes and pings and all that... We would rather spend our resources on our application."

McBride says Availity's 100-person IT shop focuses on adding new features to its software, which has doubled its user base in the last year.

"We do 600 million transactions annually," McBride says. "We need very high uptime and great performance.... The other thing we get with Savvis is the ability to have geographic redundancy."

Dave Banks, CTO with Propertyroom.com, says the police auction Web site can handle bursty traffic because it runs on Savvis' cloud computing infrastructure.

### U.S. Web hosting firms enjoy rising revenues



Starr says the difference between now and 2001 is that the Web-hosting industry didn't go into the recession with overcapacity. "We've seen stats on the industry where it's above 70% utilization. Some cities are even tighter than that," Starr says.

Web-hosting firms report that demand is up from all vertical industries, including financial services, media, healthcare and software-as-a-service (SaaS).

"It's a paradox, but we're seeing growing demand and a growing number of applications from financial services firms," Foust says. "There's still quite a bit of regulatory compliance and business continuity needs to be met, and new internal applications for risk management."

Foust says investment banks, commercial banks, insurance companies and securities trading platforms are outsourcing applications to Digital Realty's data centers because these turnkey facilities provide low operating costs. Digital Realty's new customers this quarter include asset management firm Neuberger Berman.

See Web hosting, page 14



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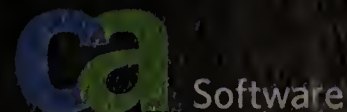
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## NEWS ANALYSIS

### Tech Ed

continued from page 5

be used.

"We are going to have to carefully plan out the upgrade because we don't have any budget to get another machine, which we would need," he said.

Clearly, with all the software released by Microsoft in the next year, choices will have to be made and the clearest indication of what those choices are could come in July when Microsoft reports its earnings, including the depth of corporate renewals on Enterprise Agreement (EA) contracts.

Those volume licensing agreements run for three years and give users licenses for software, most notably Windows and Office. And a significant portion of those contracts historically expire in Microsoft's fiscal fourth quarter (April to June).

With Windows 7 shipping in the next seven months, volume-licensing customers will likely renew EA contracts, which would give users the rights to the new client operating system.

In addition, generally favorable user reviews coming out of TechEd on Windows Server 2008 R2 could lead companies to cover Core Client Access Licenses on their EA contracts. With those client access rights, users would be inclined to look at the new version of Exchange and SharePoint Server 2010.

The results could either be a perfect match for Microsoft with major product releases carefully planned to coincide with an important milestone in the IT buyer's upgrade cycle, or a roar that falls on nearly deaf ears of those with severely deflated corporate wallets. ■

### Web hosting

continued from page 12

"They manage the hardware, they manage the OS, the patching, the firewalls, the load balancing, all the network hardware and the infrastructure for us, and we have our software running on top of it," Banks says.

Banks says Propertyroom.com runs its application on seven virtualized servers at Savvis' Chicago data center.

Doerr says CIOs want to focus their internal resources on mission-critical applications while offloading rudimentary IT operations. "Where [CIOs] add value is as a change agent for the business, as they incorporate technology and evolve the business for opportunities provided by technology," he says. "None of that is dependent on how well they operate a data center facility, or operate a server, or patch a server or operate a firewall."

Salesforce.com, for example, runs its entire IT infrastructure on three Equinix data centers, while Bechtel uses Equinix data centers to support its push to a private SaaS model.

Equinix says the main reason companies such as Bechtel and Salesforce chose its data centers is because they are carrier-neutral and allow for reduced latency on applications that run across many networks.

"The savings [customers] get by having access to all of these networks under one roof can offset what they are spending with Equinix," Starr says.

Whether the demand for Web-hosting services is a stop-gap measure for enterprises until the economy recovers or a permanent trend remains to be seen. Web-hosting firms report that once they get an enterprise customer to outsource an application to one of their data centers, the customer tends to off-load more applications and add more managed services over time.

"A CIO running out of data center space will look across the portfolio of applications and take those that are the most modular, most standard, lowest overhead from a risk perspective and move them out of the data center into a relationship with a service provider, freeing up power and space in the primary data center for critical applications," Doerr says.

Starr says it's very difficult to take an application out of an Equinix data center and bring it back in-house. "It's a very sticky business model." ■



# Enter the cloud

BY DAVID ROBBINS

**C**loud computing is a reality, and it's a force that IT professionals need to quickly come to terms with. The economic and social motivation for the cloud is high, the business need for speed and agility is greater than ever before, and the technology has reached a level in which prudent investments in cloud services are fast and easy. The number of cloud success stories is growing every week.

The cloud is here, but what exactly is it? Where is it headed? What are the risks? And how can IT organizations prepare?

Cloud computing is the use of Internet-based services to support a business process. Cloud services typically have the following characteristics:

- They can be rapidly deployed, so they are quick to value.
- There is little or no start-up cost and no capital investment.
- Costs for services are usage based with no fixed commitment.
- Services can be quickly and easily scaled up or down with no penalty.
- Services are multi-tenant.
- The ability to customize a service is limited.

The cloud lets users contract for services at three levels:

● **Infrastructure-as-a-service**: Grids of virtualized servers, storage and networks. Examples include Amazon's Elastic Compute Cloud and Simple Storage Service.

● **Platform-as-a-service**: The abstraction of applications from traditional limits of hardware allowing developers to focus on application development and not worry about operating systems, infrastructure scaling, load balancing and so on. Examples include Force.com and Microsoft's Azure investments.

● **Software-as-a-service**: Applications with a Web-based interface accessed via Web services and Web 2.0. Examples include Google Apps, Salesforce.com and social network applications such as Facebook.

A slew of investors are exploring cloud options while Amazon and Google already have important cloud offerings and companies such as Microsoft and IBM are investing billions of dollars.

Looking further into the future, standards will emerge that reduce some of the uncertainties of contracting for cloud services.

As with any service, with the cloud you should always make sure that you know what you are paying for and what measurements exist to show you are actually receiving the service. You should pay careful attention to:

● **Service levels** — Cloud providers may be hesitant to commit to consistency of performance for an application or transaction. Understand the service levels you can expect for transaction response times, data protection and speed of data recovery.

● **Privacy** — Someone else hosting and serving your data could be approached by the U.S. government to access and search that data without your knowledge or approval. Current indications are that they would be obligated to comply.

● **Compliance** — You are probably already aware of the regulations that apply to your business. In theory, cloud service providers can meet the same level of compliance for data stored in the cloud, but you'll need to take extra care because most of these services are young.

● **Data ownership** — Do you still own your data once it goes into the cloud? You may think the answer to this question is obvious, but the recent flap over Facebook's attempt to change its terms of use suggests that the question is worth a second look.

● **Data mobility** — Can you share data between cloud services? If you terminate a cloud relationship can you get your data back? What format will it be in? How can you be sure all other copies are destroyed?

For a service that's going to be critical to your company, the best advice is to ask a lot of questions and get all commitments in writing.

## What are smart companies doing now?

There are a lot of opportunities for IT organizations to leverage cloud services. Many organizations are enhancing their existing infrastructure to take advantage of "cloud bursting"; when you need extra capacity for an activity, you can quickly leverage resources from the cloud rather than investing in those resources in-house.

Development/test and similar activities are also great cloud opportunities, allowing you to reduce capital spending and related data center costs while increasing speed and agility.

Companies that are hesitant to commit data to the cloud are developing models to store production data in their own facilities to ensure they meet compliance requirements while leveraging massive compute resources in the clouds for processing as needed.

## Are you ready?

If your organization is just beginning to explore the cloud there are a number of mature cloud services that can be considered "low-hanging fruit," such as e-mail services. But in addition to looking outside, you may want to evolve your internal infrastructure toward a more cloud-like model.

That will likely mean determining what role IT will play in enabling the business models required by today's economy. How will you improve speed and agility? How can you support your business operations with fewer fixed expenses? What will you do to engage a new generation of professionals?

You should define opportunities and work with your customers to understand what services can best meet your needs or fill gaps in your existing IT portfolio.

The first step is to assess your ability to assist in contracting for cloud services. Your job is to make the process simple, repeatable and beneficial to your business.

Second, you need to identify which services can reside in the cloud and which should be internal. Determine what systems and services are core to your business or store your crucial intellectual property. These should be categorized as high risk and not considered cloud opportunities in the near term.

Finally, you need to develop a sourcing strategy to achieve the low cost, scalability and flexibility your business is seeking. This should include all the necessary protections such as data ownership and mobility, compliance and other elements familiar from more traditional IT contracts.

*Robbins is CTO for IT at NetApp. He is responsible for identifying and selecting new technologies and establishing the adoption road map and timing for NetApp IT delivery.*

## Got great ideas?

■ *Network World* is looking for great ideas for future Tech Updates. If you've got one, and want to contribute it to a future issue, contact Editor in Chief John Dix (jdix@nww.com)

This vendor-written tech primer has been edited by Network World to eliminate product promotion, but readers should note it will likely favor the submitter's approach.





## GEARHEAD

Mark Gibbs

# Excel, Twitter, FreeBASIC and a book

I've written about Twitter on and off over the last few weeks (<http://tinyurl.com/p9jjmz>) and it seems that interest and innovation in social media in general and Twitter in particular continues unabated.

To keep track of all of the Twitter applications and services that are appearing, about a month ago I started to compile a directory of Twitter stuff. This was going quite well (I was up to 224

outline entries) but then a few days ago reader Chris Miller (St. Louis) wrote to tell me that he had noticed my "Twitter binge" and suggested that my obsession might be aided and abetted by his Twitter directory at EverythingTwitter.com [<http://bit.ly/162t8u>].

He's right. This Web site is a great compendium of all things twitterific and well worth exploring to see what tools and services might be valuable to you. I award EverythingTwitter.com a 5 out of 5 rating.

In the last Gearhead column that analyzed Twitter with Excel I offered readers a copy of the batch files and utility programs I had assembled to grab and analyze Twitter data. What I eventually sent out wasn't quite what I had planned. The system of batch files just wasn't up to the job, so in addition to cURL, I resorted to a suite of ugly little programs I wrote using FreeBASIC.

FreeBASIC is a free, open source BASIC compiler for Windows that is mostly QuickBasic-compatible and also provides features such as threading, operator overloading, function overloading and namespaces. FreeBASIC comes with an integrated development environment and, as a way to build quick and dirty tools, it's outstanding.

The only drawbacks are that it is Windows-only, sometimes produces diagnostic messages on programming errors that make little sense, and some of the documentation is incomplete. Bottom line: An excellent

tool despite its minor shortcomings. I'll give FreeBASIC a rating of 4.5 out of 5 — definitely something to keep in your toolbox.

In my Excel/Twitter solution a main program takes the command-line arguments (these are a search term and start and stop dates) and calls a helper program for each date in the range specified.

This helper program, in turn, loops for as many as 500 "pages" of search results by executing a PIPE command using cURL. The PIPE lets cURL's output (the results of a Twitter search) be read by the helper program and parsed to count the number of Tweets returned (by searching for the string 'class="avatar"', which only occurs in the user data associated with a Tweet ... I did say it was ugly).

The helper program (which I created to ensure that the PIPE input to the program was closed before performing the next PIPE command) calls another utility that builds a CSV file (that is named after the search term) and, voila! You wind up with a data file that you can haul into Excel and slice and dice to your heart's content.

All of you who asked for this package of programs, this cornucopia of code, this salmagundi of software, should have received an e-mail by now — if you didn't hear from me or have yet to request the files, then please resend your request to "gearhead@gibbs.com" with the subject "TA" otherwise your request may not be noticed.

To close this week I want to recommend a book that anyone designing Web applications will find really useful: Effective Prototyping with Excel by Berger et al (Morgan Kaufmann, 2009). This well-designed book details techniques for using Excel as a user interaction prototyping system. It is thorough, insightful and capitalizes on a tool every IT professional will have anyway. Terrific stuff and worth a 5 out of 5.

*Gibbs is basically in Ventura, Calif. Your requests to gearhead@gibbs.com.*



Keith Shaw

## COOLTOOLS

# Seagate's Replica truly set and forget

**The scoop:** Replica backup storage device, by Seagate, about \$200 (for 500GB version; 250GB version costs \$130)

**What it is:** Imagine a really small toaster that was flattened, and you get the idea of the size of the Seagate Replica, a 250GB or 500GB hard drive that connects quickly and easily to your PC or notebook to provide instant backup of everything that you've got stored on the computer.

Unlike regular external USB hard drives, users can just plug in the Replica and leave it alone — the software takes care of the rest, backing up all the files on the hard drive without needing any additional user support. The 500GB version is aimed at backing up two computers — it also comes with a handy USB docking station that lets you place the Replica on a vertical stand.

**Why it's cool:** If you (or your users, or family members) hate the idea of data backup, you really can't get any easier than the Seagate Replica.

The "set it and forget it" concept really does apply here. After connecting the USB cable to my notebook, I got the pop-up window asking me whether I wanted to start the backup, and after choosing "yes", the Replica was off and running. The cool part is that the Replica runs in the background, allowing you to do other work while it does the backup. The software is also smart enough to track changes to your files while it's working, so you can be assured that the Word document you created while Replica was running will still be backed up.

**Another cool feature:** Replica will remember where it was in the backup process if you shut down the system, and will start back up when you plug it in later. I started a backup at home one night

and was able to finish it at work the next day, for example. The Replica software runs in the Windows system tray (at least in Windows XP), and lets you get a glimpse as to its status (how many files it has left to copy, for example), as well as other options for backup and security (you can set a password for access to the backup copy).

**Some caveats:** The only recommendation I would have before using this is to make sure that you've cleaned up the hard drive you want to back up. In my test, it took several hours for the Replica to copy every single file (I had at least 30,000 files it needed to go through), and this likely includes files that I really don't need copied. If you are relatively organized in your file storage, it might be easier and quicker to just copy needed files (photos, music and videos, for example) via a regular USB external hard drive.

**Grade:** ★★★★★ (out of five)

*Shaw can be reached at [kshaw@nww.com](mailto:kshaw@nww.com). Follow him on Twitter at <http://twitter.com/shawkeith>*

**Seagate's Replica takes the pain out of data backup.**





**OVER \$105M  
SPENT MONTHLY  
Cleaning Infected  
Computers** page 3C

**Over \$3 Billion  
Spent Managing  
Content Security Solutions**

**Employee Productivity Losses  
Hit All-Time High: Annual  
Costs to U.S. Enterprises  
Over \$1 Billion**  
continued on 8D

**Security Update  
Costs Soar:  
\$793M  
SPENT  
Annually**  
PAGE 6B

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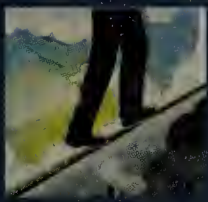
**CASE STUDY:** The United States Golf Association hooks into IBM's cloud computing service. (story at right)

**CASE STUDY: Cloud or not a cloud:** A New Jersey engineering firm is storing inactive data with Iron Mountain. Is it technically a cloud service? **Page 22**

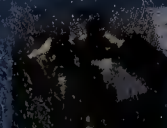


**CASE STUDY:**  
**Carlsbad connects to the cloud**  
California coastal city entrusts its e-mail to a Microsoft cloud-based service. **Page 23**

**Walking the line:** Five reasons to embrace cloud computing/Five reasons to stay away. **Page 24**



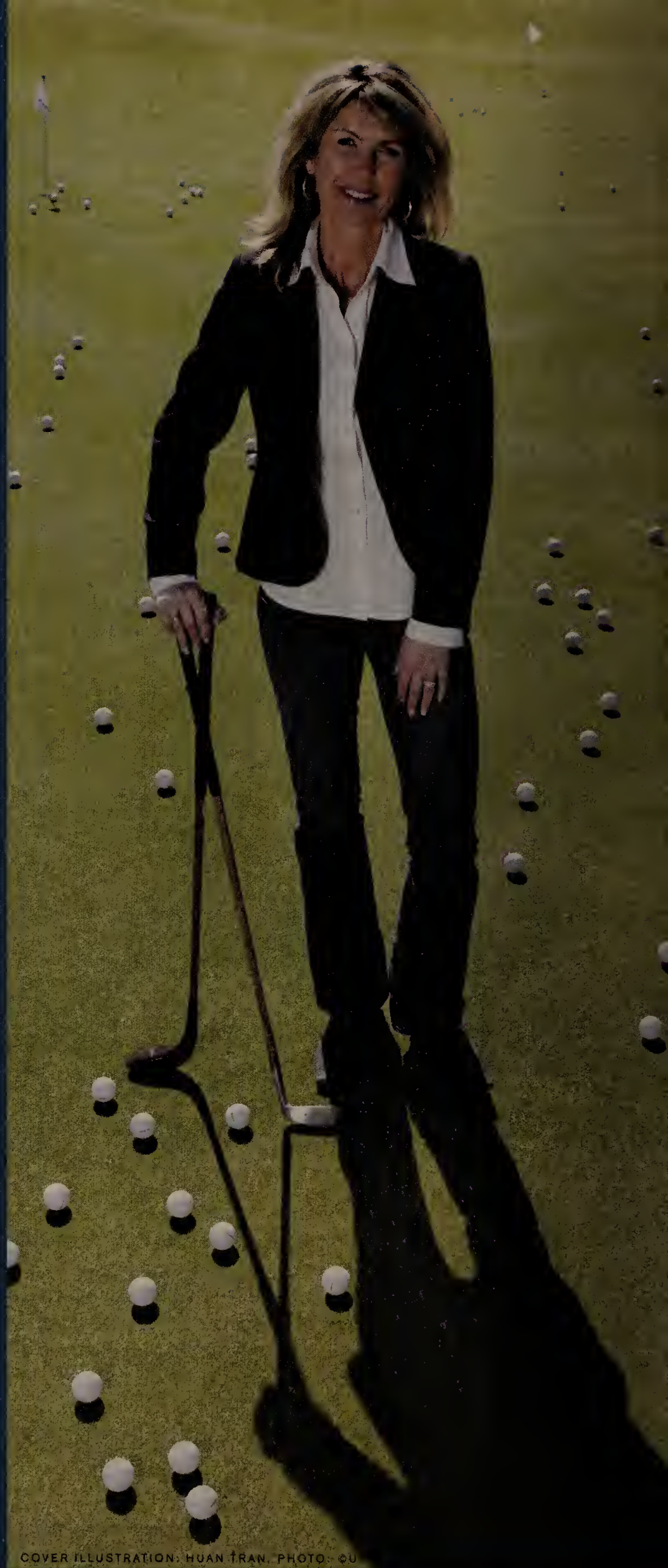
**How to buy cloud computing services:**  
Five key questions to ask any prospective cloud provider. **Page 27**



**10 cloud computing companies to watch.** **Page 32**

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COVER ILLUSTRATION: HUAN TRAN. PHOTO: QU



BY NEAL WEINBERG

# GOLF ASSOCIATION HOOKS INTO IBM'S CLOUD

## USGA signs on with Big Blue for disaster-recovery services

■ Business resiliency was the main driver for the United States Golf Association when it recently chose the IBM cloud for e-mail and data protection services.

Jessica Carroll, managing director of IT for the nonprofit governing body of golf, says her existing backup and disaster-recovery plans were well designed for business conditions five years ago. But they were no longer adequate for today's world in which companies can't afford to be down for even brief periods of time.

The USGA has close to 70 servers — most based at headquarters in Far Hills, N.J., with some at a backup site 20 miles away, and others in Colorado Springs, Colo. The organization has about 350 employees, roughly 225 at headquarters and the rest scattered at remote offices across the country.

The USGA had traditionally done storage and backup internally, Carroll says. In the event of a total disaster, the USGA would have ordered new equipment from its vendors, set things up in a backup location and retrieved backup tapes that had been stored offsite. In that scenario, it might

have taken a week before key data, such as 4 million membership records, would have been available again.

That type of delay might have been acceptable once, but it doesn't make the cut, Carroll says.

She looked for a better option and found a cloud-based business resiliency service from IBM. "IBM's reputation and the services it was offering were enterprise class," Carroll says. "I knew right away this was the way to go. The product was so strong."

Even so, the conservative Carroll did her due diligence. "We were back and forth for almost a year," she says, before the final contract was signed.

The agreement with IBM Information Protection Services has three components. First, there's an IBM-hosted hot site, with servers set aside and ready for the USGA to use in case of a disaster. That service has nothing to do with cloud computing, Carroll points out.

The second service is a cloud-based e-mail continuity service in which IBM automatically syncs up with the USGA's onsite e-mail servers. "If I have a disruption, if a

machine is down, at the flip of a switch, we flip over to the Web service," Carroll says.

E-mail is a critical application for the USGA, which generates 150,000 messages a day. "It's really been on my mind," Carroll says. E-mail communication between the USGA and its members is "necessary to run to business."

She adds, "Last summer the phone system went down for a couple of days and nobody blinked an eye. If e-mail is off for 30 seconds, the help desk phones are ringing."

Carroll says testing and implementation of the Outlook e-mail service was completed last fall.

The other cloud service is a nightly backup of 2TB of mission-critical data. She says the USGA had two implementation options — it could have had every server perform a full backup over the WAN to the IBM cloud. That would have taken eight hours every night.

Carroll says she went with the second option. Software agents placed on each server take snapshots of the data. Those snapshots are funneled into a server in the USGA data center, then backed up to the IBM cloud. That option cost a bit more, but Carroll says it was worth the extra expense.

Again, she says testing to make sure the service does what it's advertised to do is critical.

While Carroll doesn't consider herself to be on the bleeding edge, she does have some experience

“If I have a disruption, if a machine is down, at the flip of a switch, we flip over to the Web service.”

**JESSICA CARROLL, MANAGING  
DIRECTOR OF IT, USGA**

See USGA, page 22



# Vista ON Dell

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**Businesses today expect more from IT than maintenance;** they require competitive advantage in agility, security and scalability. IDC believes deployment is the time to seek those advantages, and a lower TCO. They are readily available, but require companies to standardize on a best-in-class platform like Vista, and to automate deployments as much as possible.

Bluntly put, there is no business case for deploying less-than-optimally secure equipment with a higher TCO. For IT decision makers in today's environment, a proven way to maximize security and minimize TCO is to purchase Windows Vista on Dell equipment for all new deployments—and then automate those deployments, all with an eye toward migrating easily to Windows 7 when the time comes.

## WINDOWS VISTA ON DELL IS POWERFUL

Windows Vista is more than an upgrade from Windows XP; it's a step-change to keep pace with the business environment. With advantages in mobility, security, collaboration and productivity, Windows Vista pays now while setting CIOs up for a smooth transition to Windows 7.

In terms of mobility, Vista's Mobility Center puts frequently-used notebook settings (like power management and sleep state) in a single place. Vista enables remote collaboration with Windows MeetingSpace, allowing up to 10 workers to collaborate securely over a wired or wireless network. And Vista offers best-in-class security, with an infection rate 60.5 percent less than XP SP2 systems; this is owing to security tools like BitLocker technology, which encrypts hard drives and enables "remote kill" capability. Finally, Vista offers Web 2.0-grade desktop search capability, finding files in seconds, versus minutes on XP.

Dell answers the demands for manageability and lower TCO with its Deployment Optimization Model (See sidebar). IDC research discovered that much of a computer's TCO occurs in the first week—up to \$700 per machine—and that costs vary by degree of automation (see Figure 1). The largest cost, IT labor, can be reduced by 62 percent through automation, saving \$418 per work station. Thus, hands-on deployments cost \$678 per PC and take 2.6 IT labor hours, versus \$260 and 36 hands-off minutes for fully-automated (or "dynamic") deployments.

## WHY VISTA NOW?

Companies using Windows XP may be tempted to bypass Vista and go straight to Windows 7, but to do so is to defer competitive security, mobility and productivity. A two-step migration (XP to Vista to Windows 7) offers the immediate benefits of lower TCO; step-change advances in mobility and security; and a ready platform for Windows 7. It is a longer leap between XP and Windows 7; Vista applications will run on 7, but XP applications require more remediation. And companies can expect diminishing support for Windows XP, versus full automated support for Vista.



## Dell's ImageDirect service deploys a customized image across systems during manufacturing, ensuring that all new deployments are up-to-date.

### VISTA ON DELL PCS AND NOTEBOOKS

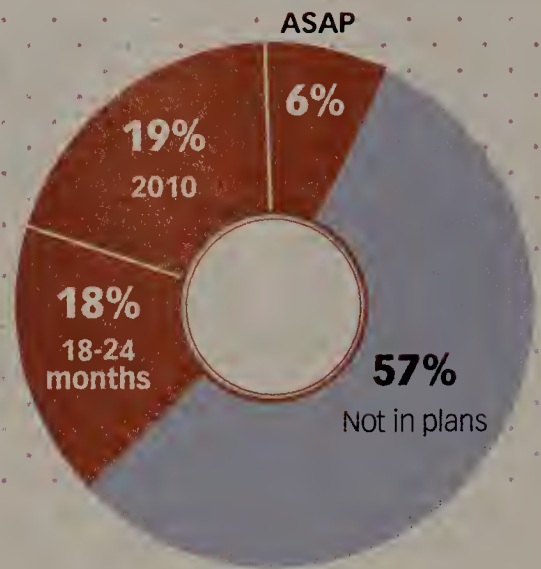
IDC Research Services estimates that in 2010, notebooks will account for 48 percent of new deployments in workplaces; and desktop computers 52 percent. This has had a very positive effect on business computing overall; it has driven up security and configurability standards for all computers, which Vista and Dell's Deployment Optimization Model represent.

Notebooks are equal to desktops when it comes to price and processing power, but offer distinct advantages. Desktop users in small businesses believe they would gain 4.1 productivity hours per week using notebooks, but notebook users believe they gain 11.5 hours (see Figure 2). Thus "corridor warriors" benefit from the same utility as "road warriors."

Businesses like notebooks, but have high expectations from them. Wi-Fi coverage (61 percent) and security (60 percent) were the top concerns of the nearly 250 IT professionals responding to an October 2008 IDG survey. And businesses expect an 18 percent savings in TCO from using notebooks, through sheer standardization of, for example, licensing and compliance.

CXO QUICK POLL:  
**43% Plan Windows 7 Deployment within 24 Months**  
**Q. What are your Windows 7 Deployment plans?**

Asked of LinkedIn CIO Forum and CXO Peer Research panel March 6-18. 90 Respondents.



Vista improves upon XP with seamless, automated Wi-Fi connectivity. Again, Vista users can collaborate on a single file or application with MeetingSpace. Finally, Dell's automated deployment can reduce TCO by \$418 in the first week, and virtually eliminate the \$500-600 of IT labor per year per computer, according to IDC. Automation over a computer's lifecycle enables IT to focus on revenue-generating activities and business goals (like e-commerce and transaction processing) versus maintenance.

Finally, hard drive encryption, which Dell offers on several models, is critically important for mobile users, who may use the Wi-Fi hot spot in a Starbucks but be assured that enterprise data is secure.

### CONCLUSION

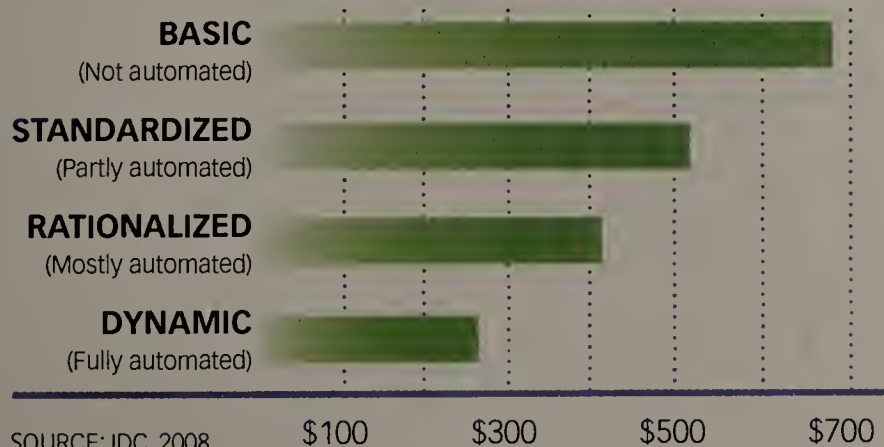
Very few companies—perhaps 5 percent—have achieved dynamic deployment according to IDC; a full 62 percent are at the basic level.

IDC believes that in an age of automation, a consistent software build can achieve maximum security, compliance and mobility with minimum TCO. This is only achievable with Windows Vista and automated deployment like that from Dell.

Finally, as mentioned, IDC believes there is no business case for deploying less-than-optimally secure equipment with a higher TCO. Choosing Windows Vista on Dell equipment for all new deployments, and automating those deployments, sets up the ideal migration to Windows 7.0. It's an effective way to optimize your client infrastructure and minimize TCO, two paramount goals in challenging economic times.

### PC Deployment Costs on an Automation Continuum

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USGA, continued from page 19

with hosted applications. It's this experience that made her receptive to the concept of cloud computing.

### Online training paved the way

The USGA is a nonprofit organization that has served as the governing body of golf since 1894. It monitors the rules of golf and equipment standards, maintains a National Handicap and Course Rating System, and preserves an extensive collection of golf memorabilia at its museum and library. It also conducts 13 major championships, including the U.S. Open, U.S. Women's Open, Senior Open, and several junior and amateur tournaments.

The USGA also does training in a variety of subjects related to the rules of the game ("Officiating 101," "Temporary Immovable Objects") and to turf management.

USGA University, as it's called, is hosted by ePath Learning. The USGA provides the content and ePath Learning does the rest, offering people the ability to take these courses at their own pace and convenience.

Because the entire application is hosted at the ePath Learning site, the USGA did not have to spend upfront on infrastructure or employees, Carroll says. About 1,500 people have taken advantage of the online training courses.

Similarly, Carroll uses Microsoft Live Meeting for online training, which has expanded from in-house training to include state and regional golf associations, plus colleges and universities interested in turf management. She also uses Live Meeting in a variety of other ways, including training U.S. Open volunteers.

The good thing about Live Meeting: "It pays you back in terms of not buying servers to make it happen," she says. And, the long-term benefit of using cloud-based services is that "as we grow there is not an economic impact as this is covered" in the cloud services agreement.

### Lessons learned

When it comes to cloud computing, Carroll shares these thoughts. The specific cloud computing service has to be right for your organization. She says she does not have the staff resources to allow her to do the kind of disaster recovery, backup and e-mail synchronization that is required. The decision to go with a cloud computing service is "an investment we put in; it's valuable insurance," Carroll says.

She says there are times when going with a cloud provider makes sense, and times when it doesn't. In this case, "It was an easy choice to make."

However, even though IBM has a strong reputation in the marketplace, Carroll took nothing for granted. She recommends that any prospective cloud services customer ask the hard questions.

"You want to know what the hosting environment looks like. What are their disaster-recovery scenarios? How are they going to secure your data? Just because it says they do hosting, that's not enough."

She adds that customers should require language in the contract that spells out how the service provider protects itself. "Are they in an unmarked building? Do they have security at the door? Do they have another offsite facility?"

Carroll says those are the kinds of details that cloud computing customers need to think about before signing a contract. In her case, everything has worked out well. She hasn't had to put the disaster-recovery plan into action, but is confident that in the event of an outage, the USGA will be quickly back in the swing.

BY NEAL WEINBERG

## CLOUD OR NOT A CLOUD

Engineering firm reduces backup costs through Iron Mountain storage service

**W**ith virtually every vendor on the planet jumping on the cloud computing bandwagon, sometimes it's difficult to tell whether a service is really cloud or a pre-existing offering that has the cloud label slapped on it. Of course, there's no cloud certification board, no cloud test that a vendor has to pass.

So, at this point, it's pretty much anybody's guess as to what constitutes a cloud-based service and what doesn't.

Iron Mountain Digital recently launched a storage offering called Virtual File Store, which Iron Mountain calls "the industry's first cloud-based archiving solution." Virtual File Store is targeted at inactive data, according to Iron Mountain.

Bruns-Pak, a New Jersey engineering firm that designs and builds data centers, uses the Virtual File Store service. Elliott Townsend, manager of information services for the 60-employee company, says he's not all that focused on the definition of cloud computing. All he knows is that Virtual File Store is saving him \$5,000 a month.

Bruns-Pak is a longtime Iron Mountain customer. It uses Iron Mountain's Live Vault to provide critical backup services and data protection for active data. In the engineering world, projects can last up to two years, so data on a specific project is constantly being backed up over a long period of time.

But once the project is completed, Bruns-Pak might have gigabytes of data sitting on a server. Virtual File Store lets Bruns-Pak put backed-up data from completed projects into "cold storage" at a

fraction of the cost of Live Vault.

Bruns-Pak has cut daily backups from more than half a terabyte to approximately 200GB, and the cost is about one-tenth of the cost of the Live Vault service. Deployment was a breeze. Iron Mountain installed hardware to connect with its storage grid and that was about it, Townsend says.

As with other cloud customers, Bruns-Pak is no stranger to offsite services. The company uses Rackspace to host its e-mail.

Townsend says the issue for him was weighing the cost savings vs. "the comfort level for management." The Rackspace experience, which has been extremely positive, helped create that level of comfort.

As to whether the Iron Mountain service qualifies as a cloud-based offering, Steve Blumenau, vice president of digital archiving technology for Iron Mountain, says any service that an enterprise plugs into over the Internet is cloud.

Iron Mountain has been offering backup services over the Internet for nearly 14 years. The services weren't called cloud, because the term wasn't being used back then. But he says Virtual File Store certainly qualifies — it's a service over the Internet, it can scale up and down, and customers pay per usage.

He adds that when it comes to security, Iron Mountain has a history of protecting both physical and digital data, from its underground data centers protected by armed guards to its strict encryption policies. "We're the most audited company in the world," Blumenau adds.



Elliott Townsend,  
manager of IS, Bruns-Pak.



BY NEAL WEINBERG

# CARLSBAD CONNECTS TO THE CLOUD

California city entrusts e-mail to Microsoft cloud-based service

■ The human resources people at Microsoft were somewhat taken aback when the city of Carlsbad, Calif., started grilling them on what types of background checks Microsoft performs on its own employees.

But Gordon Peterson, director of IT for the seaside city just north of San Diego, says that before he would allow municipal e-mails to live in Microsoft's cloud he wanted assurances that the background checks Microsoft conducts on its people were as thorough as the checks Carlsbad conducts on its IT workers.

"Security was a big part of the RFP," Peterson says. "We asked a lot of questions on how you do security on their hire-fire process." For example, Peterson wanted to know what secur-

ity procedures Microsoft takes when it terminates an employee.

"I don't know that they'd ever been asked that before," Peterson says. But Microsoft answered the queries to Carlsbad's satisfaction and the city recently signed on for Microsoft's Business Productivity Online Suite, a cloud-based service in which Microsoft hosts the city's e-mail and collaboration services, including SharePoint, Live Meeting and instant messaging.

Peterson readily admits that "not everybody is perfectly comfortable" with the idea that municipal e-mails are being hosted outside the walls of the city. But he weighed the pros and cons and worked through a variety of issues with Microsoft before

coming to the conclusion that "the hosted environment has a higher degree of security than we can provide internally." For example, Peterson says that within his 20-person shop, tasks are shared, so he's not able to achieve the separation of duties that a larger security organization can put into place.

## The road to the cloud

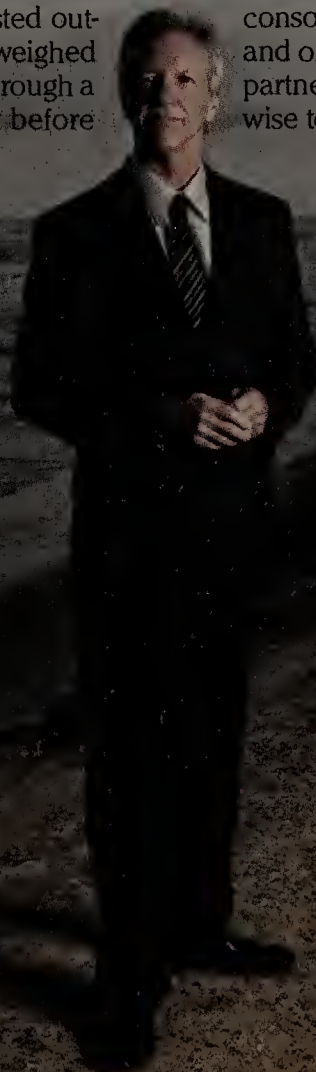
Carlsbad is a city of about 100,000 people with a municipal employee base of around 1,000, according to Peterson. The city has been working for the past couple of years to consolidate the number of IT platforms and once it chose Microsoft as a strategic partner, that meant moving from Groupwise to Exchange for e-mail.

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Security was a big part of the RFP. We asked a lot of questions on how you do security."

**GORDON PETERSON, DIRECTOR OF IT, CITY OF CARLSBAD, CALIF.**





BY BETH SCHULTZ

# WALKING THE LINE

## Five reasons to embrace an external cloud; five reasons to stay away

### On the upside

#### 1. Fast start-up

"Cloud computing is really a no-brainer for any start-up because it allows you to test your business plan very quickly for little money. Every start-up, or even a division within a company that has an idea for something new, should be figuring out how to use cloud computing in its plan," says Brad Jefferson, CEO of Animoto, a New York company that creates full-motion videos out of customer-selected photos and music. "Cloud computing has changed the game for entrepreneurs — the greatest part about it is that on launch day, you have the confidence that you scale to the world."

#### 2. Scalability

To figure out if you're a good cloud service prospect, first consider the variability of the resource utilization of your own IT structure, says Tom Nolle, CEO of CIMI, a high-tech consulting firm. "If you've got enormous peaks and valleys, you're forced to oversupply IT resources to address the peaks. It may be significantly less costly for you to out-source the peaks," he says.

#### 3. Business agility

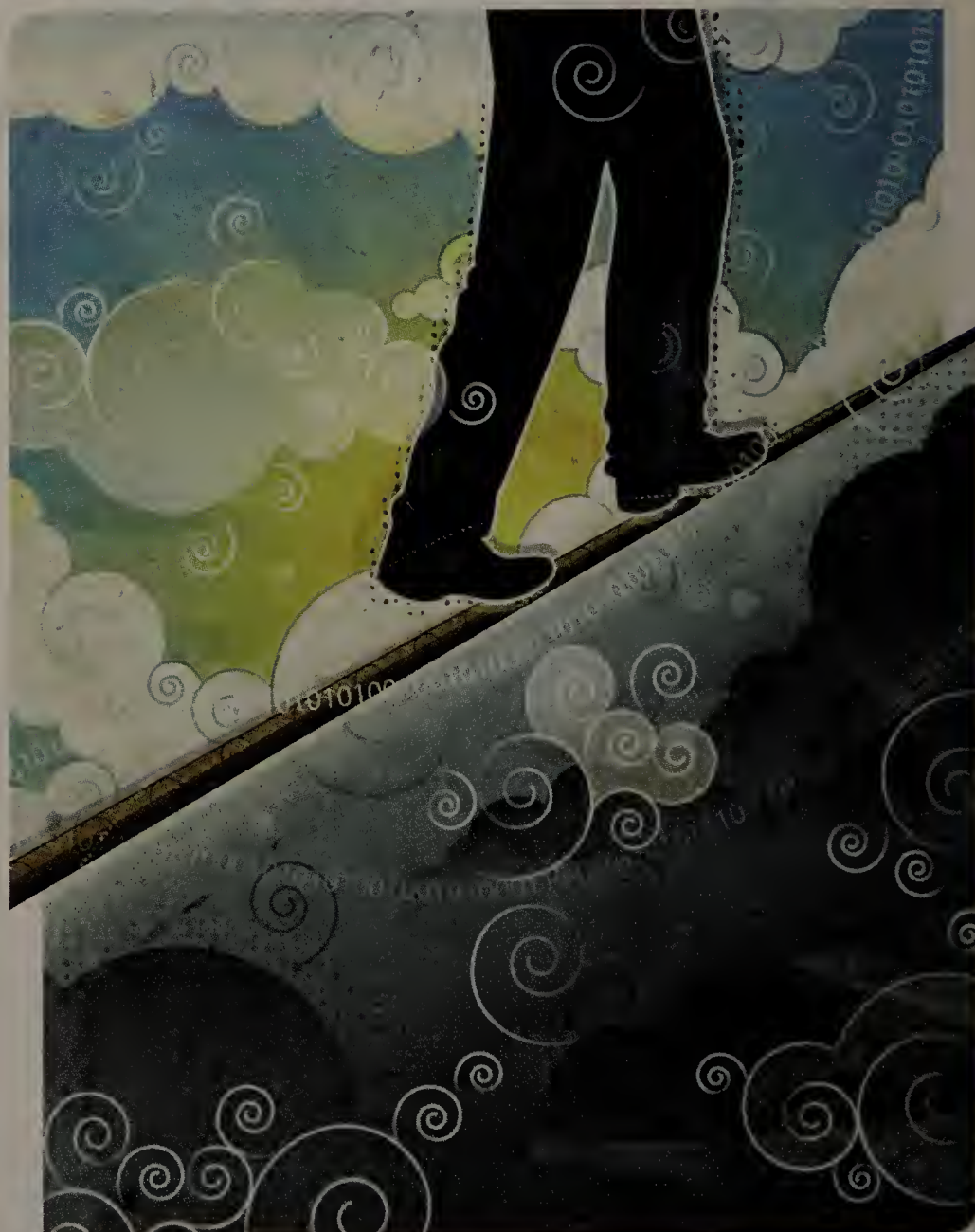
"Your mind really changes quickly when you can solve problems using IT resources but you don't need a long-term commitment and you don't have to wait a long time to get them," says Michael Crandell, CEO of RightScale, a cloud management and support company. "Cloud computing changes the whole pattern of agility at a much lower cost."

#### 4. Faster product development

Since moving some applications and data to Amazon's cloud last April, Eli Lilly & Co. has seen provisioning time drop from weeks to minutes, says Dave Powers, associate information consultant at the Indianapolis company. "If I can give scientists eight weeks back on their research, that's a huge value there," he adds. "This is really starting to impact how we do business. We're starting to reduce cycle times in research, which is critical for us. That's a trickle-down effect of technology that we can make available to the scientific community."

#### 5. No capital expenditures

Are you out of space in your data center? Have your applications outgrown the infrastructure? Cloud comput-



ing services enable a company to shift from capital to operational expenses even in do-or-die cases, says Bernard Golden, CEO of HyperStratus, a consulting firm specializing in advanced IT technologies.

### On the downside

#### 1. Bandwidth could bust your budget


Such was the case at Sony Pictures Image Works, which considered and then ruled out an external cloud service to address storage scalability challenges, says Nick Bali, senior systems engineer at the Culver City, Calif., company. Every day, Sony animators access and generate between 4TB and 12TB of data. "The network bandwidth we'd need to put that into someone's cloud and to read it back is tremendous, and the cost would be so large that we might as well buy the storage ourselves rather than paying someone else for it," he says. Now Sony is evaluating a private storage cloud, using ParaScale's cloud storage software.

#### 2. App performance could suffer

A private cloud might, but a public cloud definitely wouldn't lead to improved application performance — not when taking network latency into account, says

See Walking page 26





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Carlsbad, continued from page 23

The next question for Peterson was whether to build and maintain the system internally, build the system and have someone else run it, or have it fully hosted.

Peterson had conversations with Gartner analysts, conducted a thorough RFP process and ultimately decided that a hosted solution was the way to go.

"We felt comfortable that this is viable. We learned that it's less expensive than doing it ourselves," Peterson says. He adds that going with hosted e-mail frees up IT staffers to do more high-value projects. "Around 70% of our time and money is spent keeping the lights on," Peterson says. "The rest is innovation and that's where the real value comes in."

In pure dollars and cents, over a four-year period, the Microsoft deal will cost \$330,000, a managed solution would have cost \$390,000 and doing it all in-house was a \$500,000 proposition, according to Peterson. "That's a 30% or more savings to not do it ourselves," he says.

In term of implementation, Carlsbad went live with Exchange in late March and everything went smoothly from Microsoft's end of things. "You went home Friday as a Group-wise user and you came back Monday as an Exchange user. The service works fine," he says.

The only glitch occurred when it came to data migration. Carlsbad used a third party to migrate existing data from one system to the other, and initially about 100 of the 1,000 users didn't get their files moved. That was quickly rectified.

One of Peterson's initial concerns had to do with bandwidth. Carlsbad has a 20MB pipe to the Internet and Peterson says he was worried that it wouldn't be enough, especially when bandwidth usage soared to near 100% on the first Monday morning of the Exchange rollout. But Peterson said after that initial spike, which he attributed to employees signing on for the first time all at once, bandwidth usage has returned to previous levels.

For Peterson, the Microsoft cloud service is both a hosted e-mail service and a disaster-recovery plan. The data is hosted at a Microsoft owned and operated data center in Redmond, Wash., and mirrored to a second site in Virginia. "There's full failover," Peterson says.

### Cloud or not a cloud

With all the hype surrounding cloud computing, it's not always clear whether a hosted service is technically a cloud-based service or not. Peterson says he's not that concerned about the semantics of it all.

But he does have his own idea of what cloud computing means. It's the notion that he doesn't have to know exactly where the data is, as long as he's sure that it's safe and accessible.

There's also a software-as-a-service component to cloud computing, Peterson says. The vendor hosts the application, "they provide the compute power to handle what we need" and the customer doesn't need to get involved in the details, like how many servers, how many gigs of storage. "We don't know and we don't need to know," he says.

And finally, there's the scalability piece, where Peterson says he is able to easily scale up the e-mail service as his needs increase. Plus, he is able to quickly add new features and applications.

For example, if he ends up needing to archive e-mails from municipal attorneys, he can add an archiving feature for \$5 per mailbox. "It's an on-demand sort of thing," he says.

Plus, he plans to roll out Live Meeting within the next couple of months, followed by SharePoint a few months later. Those applications are all included in the enterprise application contract that Carlsbad signed with Microsoft.

Of course, there are other aspects of cloud computing that don't apply in this case. For example, some experts and analysts say the ability to scale down, as well as to scale up, is a

feature of cloud computing. And then there's the pay-for-usage feature of cloud computing. Carlsbad has signed what's more like a traditional outsourcing or hosted application contract. Nevertheless, Microsoft calls this a cloud computing service and to Peterson it really doesn't matter as long as it works.

### More cloud

Peterson says Carlsbad has had some experience with hosted applications, including some library applications and his own help desk, which has been outsourced for some time. He's now looking at a new human resources management system and plans to have that hosted.

There's another angle that comes into play with hosted services, he says. They don't involve capital expense or new personnel, so they're an easier sell, especially in these tough economic times.

Peterson says he will lose the ability to customize applications by going the cloud route, but he says e-mail has become a commodity. "You don't need to know a lick about Carlsbad to be able to provide e-mail."

And if Carlsbad decides to go in a different direction down the road, provisions for what Carlsbad's legal team call "disentanglement" have been put into the contract. "We did address getting out of the contract and how we would get our e-mails back."

But at this point, Peterson isn't looking to do less with cloud computing, he's looking to do more. "We're asking this question on everything now," he says.

Walking, continued from page 24



Tony Bishop, CEO of Adaptivity, a consulting firm specializing in next-generation IT infrastructure.

"I couldn't see an investment bank putting a latency-sensitive application on an external cloud," adds Steve Harriman, a vice president at NetQoS.

### 3. Data might not be cloud-worthy

"On Day One, we probably had eight to 10 applications that we would have loved to take into the cloud," Eli Lilly's Powers says. "But, knowing the type of data we had and the classification [of who could see it], we decided going through internal governance and rigor around taking care of that data would be appropriate." And, definitely don't put an application that provides competitive advantage or contains customer-sensitive information in the public cloud, Bishop adds.

### 4. Too big to scale

"The bigger you are, the bigger your IT resource pool. And the bigger your IT resource pool, the less likely it is that you'll see any enormous financial advantage in outsourcing to the cloud," CIMI's Nolle says. "Cloud computing promotes better resource utilization, ... but the gains are greatest when moving from relatively small consumption of resources upwards. If you're a very large enterprise, you might find you can achieve better economy by doing your own cloud than going to an outsourced one."

### 5. Human capital may be lacking

Exploring next-generation IT models requires an adventuresome spirit and technical astuteness, HyperStratus' Golden says. "If you don't have the human capital that's willing to stretch and learn new things, taking on cloud computing can be very frustrating."

*Schultz is a freelance IT writer in Chicago. She can be reached at bschultz5824@gmail.com.*



BY BETH SCHULTZ

# HOW TO BUY CLOUD COMPUTING SERVICES

Five key questions to ask any prospective cloud provider

■ If you need more computing or storage capacity in your data center but capital expense is an issue, then a public cloud computing service makes a nice option. You get on-demand IT resources that are infinitely scalable and you pay for what you use.

But running an enterprise application in a public cloud isn't as simple as some providers might have you believe.

Buying a cloud service isn't just about the nuts and bolts of computing and storage, cautions Dave Powers, associate information consultant at Indianapolis-based Eli Lilly & Co., which has been using Amazon Web Services (AWS) since April 2008. "It's about all of the Web services and capabilities built on top of the cloud that makes being able to spin up some computing, do some storage and then tear it all down very low-friction."

Before committing to a cloud services provider, IT execs should understand exactly what resources they have on hand, what they're buying, and how running on a public, shared server infrastructure will affect applications and business processes.

Tony Bishop, CEO of Adaptivity, a consulting firm specializing in next-generation IT infrastructure, puts it this way: "As much as cloud does away with the limitations of hardwired infrastructure, it doesn't alleviate the need for proper planning and IT integration discipline. It amplifies it."

Here are practical guidelines on issues to consider and questions to ask when buying cloud services.

“

IF YOU'RE BUYING INFRASTRUCTURE AS A SERVICE, YOU HAVE TO UNDERSTAND THAT **A MACHINE CAN GO DOWN AT ANY TIME, AND YOUR APPLICATION DESIGN NEEDS TO CONSIDER THAT.**

Dave Powers, associate information consultant, Eli Lilly & Co.

## 1. Are your applications ready?

For Bernard Golden, CEO of HyperStratus, a consulting firm specializing in advanced IT technologies, the top priority is figuring out whether an application needs modifications or a complete re-architecting for use in the cloud. "In some cases, your application architecture could even constrain your cloud options," he says. Golden uses this simplistic case as an example: "Say you have something running on an Alpha chip-based computer. You're not going

to find a cloud service that can run Alpha binaries."

Failure to rethink an application might even defeat the purpose of using a cloud service, Eli Lilly's Powers says. This was one of the company's first lessons learned as an AWS user, he adds.

"At first, we literally picked up a workflow from our internal grid environment and dropped it into the cloud. While that worked, we learned that we had constrained ourselves. In the cloud, we had this infinite amount of compute and storage, but our application, designed to run inside Eli Lilly's fixed-size computing environment, couldn't take advantage of it," Powers says.

Now, the Eli Lilly team might chunk up an application and move data into and out of the cloud in smaller, more consumable pieces, or it might store some data in the cloud, so an application doesn't have to retrieve it from the enterprise data center, Powers explains.

Powers also makes sure every cloud-destined application accounts for fault tolerance. "If you're buying infrastructure as a service, you have to understand that





a machine can go down at any time, and your application design needs to consider that," he adds.

Tom Nolle, CEO of CIMI, a high-tech consulting firm, advises that developers work through the deployment process before committing to a cloud. "You need a little flow diagram: Here's the cloud. Here's my application inquiry going into the cloud. Here are the data sources needed to fulfill that request and here's where they flow and how they get moved. Now I can see every place I have data flowing around, I have a vulnerability to network behavior and I can manage the vulnerability."

Latency, response times, throughput — these are watch points across the network. As Powers says, "We wouldn't want to be moving terabytes of data at a time in an interactive session for scientists; they wouldn't get the response times from the cloud they're accustomed to on the Eli Lilly network."

## 2. Where is your data?

A cloud provider isn't going to share nitty-gritty network details — nor should you need to delve into the cloud at such a granular level, experts say. "It's never going to give you exact addresses, hardcoded, but it will need at least to provide a broker mechanism that can tell you, 'I'll go get you that data, and I'll provide you the right data you're requesting for system-to-system communications, based on your entitlement,'" Adaptivity's Bishop says. In other words, you need to understand where your data resides in the cloud from a logical perspective.

On top of that, you may want to work with a cloud provider that lets you to designate geographically where your data resides, Nolle says.

With the Amazon cloud, for example, you can select between Europe and U.S. regions, then narrow the location further by picking availability zones. Once that's settled, you can query your ISP and Amazon about their peering relationship in those zones, Nolle says.

"The point is," he says, "if you know roughly where something is going to be allocated in terms of cloud IP resources, then you can make some intelligent judgment about how your access to those resources could be influenced by your selection of provider, or at least to whom you would have to go to obtain some kind of performance guarantee."

## 3. How is data being protected?

Working with a cloud provider allowing geographic designations also can help assuage concerns over security and, especially, compliance. Eli Lilly's Powers spells out the challenge. "We need to be cognizant of where our data is because of regulatory rules that dictate where data may or may not live geographically," he says.

"In the pharmaceutical industry, one of the first questions people ask is about privacy and regulatory-type of requirements and the second is around security. Clearly, both are huge factors for us in determining what goes out into the cloud," he says. In fact, "we haven't unleashed everything that we'd like to yet into the cloud because we're still working out processes and classification of the data — whose eyes can see what," he says.

Meantime, meeting security requirements in the cloud means encrypting data while in transit and at rest, using secure protocols such as Secure-HTTP, and vetting a provider's access control mechanisms, experts say.

You'll want to query providers about who, physically, has access to machines hosting your data. And, from an entitlement perspective, you need to specify who can make changes, update, view or otherwise manipulate your data — and have access to the audit trail, Adaptivity's Bishop says.

You've also got to cover disaster-recovery processes in your

security discussions, advises Jim Kobiellus, a senior analyst with Forrester Research. "A cloud provider should be telling you with high degree of detail how often it backs up data, where it's backed up, how it's protected from a security standpoint, and how quickly it can restore data if the main system goes down and it's restored to a hot failover system," he says.

## 4. What's customer support like?

Many IT shops may not have time to deal with all the intricacies of a move to the cloud, so they'll need to seek out help, Kobiellus says. This might come in the form of pre-packaged application suites, for example, or assistance in porting data and applications to its cloud.

A provider might offer a CRM application suite, but what if a user would rather migrate from a premises-based CRM system to a cloud-based CRM service? "Will the cloud service provider help optimize, rewrite or tweak the Java code so it runs on its platform?" he asks.

For Animoto, a New York on-demand video production start-up, help migrating the company's platform from a hosted environment to a cloud service was paramount, says founder Brad Jefferson. "We really wanted to do infrastructure as a utility, and not spend any time focusing on that — it's not a trivial task to implement against an Amazon Web Service or Google App Engine. It takes time, and we didn't want to spend all our cycles implementing it ourselves."

Amazon partner RightScale, a start-up providing cloud computing management and support, did the heavy-lifting for Animoto — to great success, Jefferson says. After moving the Amazon's Elastic Compute Cloud (EC2) service, the company launched a Facebook application that quickly went viral and became a case study for cloud scalability.

When the Facebook crowd glommed onto Animoto's free, on-demand video creation tool last April, the company saw requests leap from 25,000 in the first month to 750,000 in a four-day period. Behind the scenes, the number of servers processing videos grew from 100 to 5,000, and back down again as demand leveled off. EC2 never hiccuped, Jefferson says.

Testing the scalability of any cloud provider's infrastructure is a pre-buy must, HyperStratus' Golden says. "Promises of really elastic capability and responsiveness doesn't do you much good if you press a button and the new servers launch a day later.

Adaptivity's Bishop agrees. "You better be doing your due diligence, asking providers, 'How are you going to prove to me that you're delivering the service level that you're offering? What insight do I have? What tools, and what kind of reporting do you offer? What kind of penalties are in place? A lot of these are what you'd find in an old outsourcing contract,'" he says.

And, if a cloud provider can't show real-time performance monitoring and performance statistics and deliver trended reporting, then don't buy into that cloud, Bishop says. But don't rely exclusively on the provider's management dashboard. "You want your own application, network and transaction monitoring tools so you can guarantee that the user is getting the experience you've contracted for or is used to," he says.

And, don't forget to ask a cloud provider about troubleshooting processes, says Chad Swartz, senior manager of IT operations for Preferred Hotel Group, in Chicago.

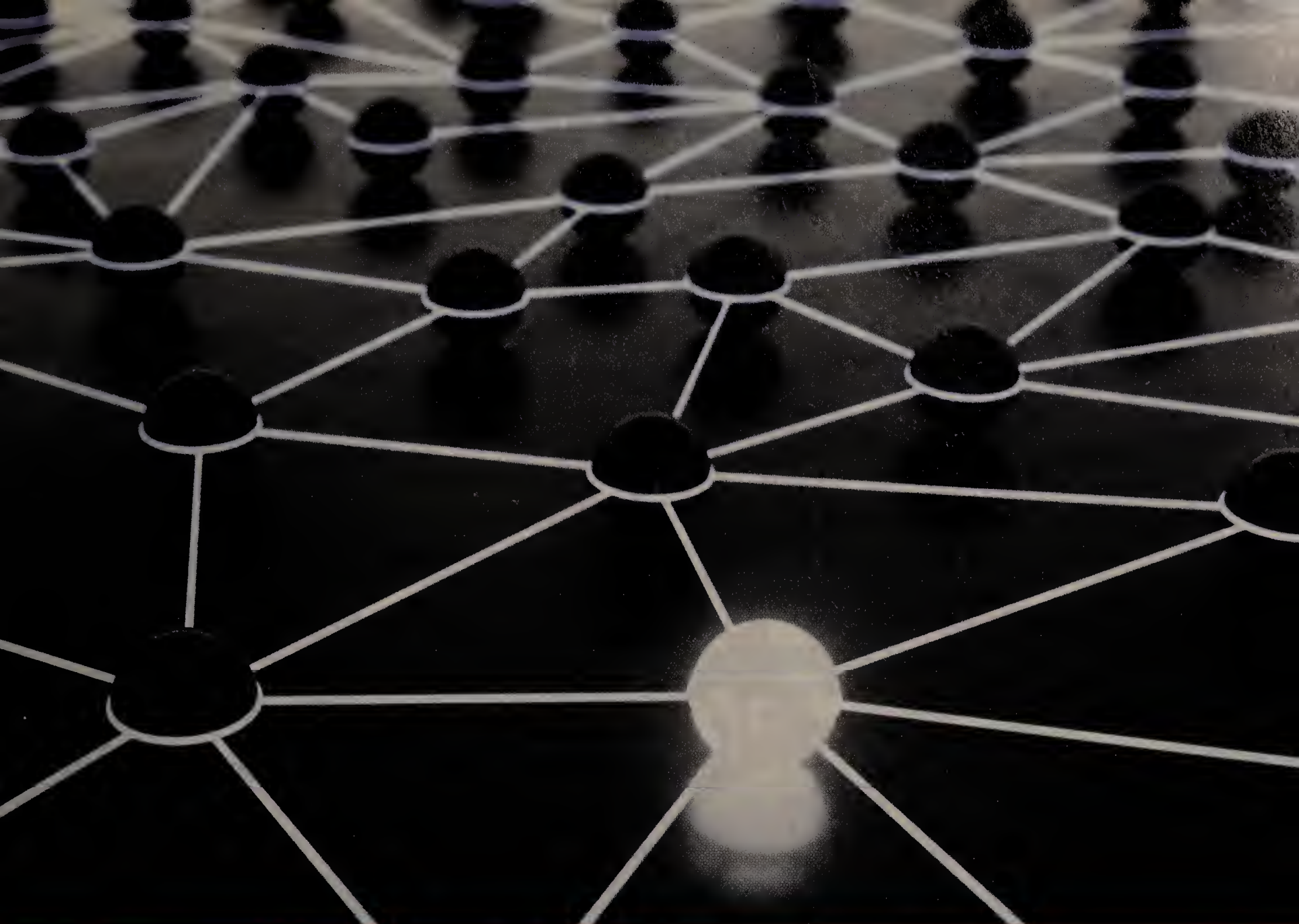
## 5. How What's my exit strategy?

Equally important, Swartz adds, is getting the answer to this question, "What's your pull-out plan?" In its contract, for example, Preferred Hotel Group specified how Terremark would need to help the company move its data and applications to another provider should it terminate the contract early.

Cloud decision-makers must consider application portability, too, adds Jeff Kaplan, managing director of Thinkstrategies, an on-demand consulting services firm. "If I put my data up, how can I get it back, especially if I've used a provider's preferred application development language? Don't paint yourself into a corner."

*Schultz is a freelance IT writer in Chicago. She can be reached at bschultz5824@gmail.com.*





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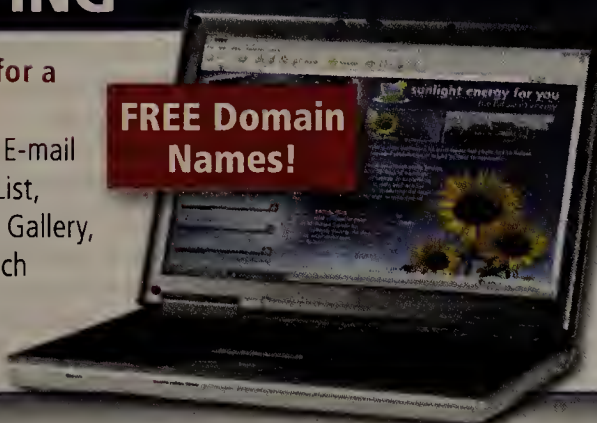
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BY JON BRODKIN

# 10 CLOUD COMPUTING COMPANIES TO WATCH

■ Cloud computing is spreading through the IT world like wildfire, with innovative start-ups and established vendors alike clamoring for customer attention.

Generally speaking, cloud providers fall into three categories: software-as-a-service (SaaS) providers; infrastructure-as-a-service vendors that offer Web-based access to storage and computing power; and platform-as-a-service vendors that give developers the tools to build and host Web applications. Here are 10 cloud companies that are worth watching.

## Company name: Amazon

**FOUNDED:** 1994

**LOCATION:** Seattle

**CLOUD OFFERING:** Amazon Web Services, a half-dozen services including the Elastic Compute Cloud for computing capacity, and the Simple Storage Service for on-demand storage capacity.

**WHY WE'RE WATCHING IT:** Amazon is one of the true innovators in Web-based computing, offering pay-as-you-go access to virtual servers and data storage space. In addition to these core offerings, Amazon offers the SimpleDB (a database Web service); the CloudFront (a Web service for content delivery); and the Simple Queue Service (a hosted service for storing messages as they travel between computers). By launching the Elastic Compute Cloud in 2006, well before most of its competitors, Amazon has become almost synonymous with "cloud computing." But criticisms are starting to pop up regarding Amazon's reliability and service-level agreements.

**CEO:** Jeffrey Bezos, Amazon's founder, was previously a financial analyst.

**HOW AMAZON GOT INTO CLOUD COMPUTING:** One of the largest Web properties in existence, Amazon always excelled at delivering computing capacity at a large scale to its own employees and to consumers via the Amazon shopping site. Offering raw computing capacity over the Internet was perhaps a natural step for Amazon, which had only to leverage its own expertise and massive data center infrastructure to become one of the earliest major cloud providers.

**WHO USES THE SERVICE:** Tens of thousands of small businesses, enterprises and individual users. Prominent customers include the *New York Times*, *Washington Post* and Eli Lilly.

## Company name: AT&T

**FOUNDED:** 1983

**LOCATION:** Dallas

**CLOUD OFFERING:** Synaptic Hosting, an application hosting service that offers pay-as-you-go access to virtual servers and storage integrated with security and networking functions.

**WHY WE'RE WATCHING IT:** Amazon and Google may be the biggest names in cloud computing today, but don't discount the built-in advantage telcos have when it comes to infrastructure. "Building publicly accessible cloud infrastructure is not inexpensive or uncomplicated," says Pund-IT analyst Charles King. "The service providers already have those infrastructures in place — the data center assets, connectivity and billing."

While AT&T has a head start, rival Verizon offers cloud-based security services and seems poised to make a larger run at the cloud market later this year.

**CEO:** Randall Stephenson, appointed in 2007 after three years as AT&T's COO.

**HOW AT&T GOT INTO CLOUD COMPUTING:**



AT&T's foray into the cloud began in 2006 with its purchase of USInternetworking, an application service provider with enterprise customers in more than 30 countries. When announcing Synaptic in August 2008, AT&T said it had combined USi technology with five "super Internet Data Centers" in the United States, Europe and Asia, which will act as regional gateways to the AT&T cloud network.

**WHO USES THE SERVICE:** Synaptic is powering major Web properties such as the official Web site of the U.S. Olympic Committee.

## COMPANY NAME: Enomaly

**FOUNDED:** 2004

**LOCATION:** Toronto

**CLOUD OFFERING:** Enomaly's Elastic Computing Platform (ECP) is software that integrates enterprise data centers with commercial cloud computing offerings, letting IT pros manage and govern both internal and external resources from a single console, while making it easy to move virtual machines from one data center to another.

**WHY WE'RE WATCHING IT:** Unlike the other nine vendors on this list, Enomaly doesn't offer services of its own over the Web. But its software could prove crucial as enterprises grapple with the problem of managing a wide array of computing resources that live both inside and outside the firewall. Intel has recognized Enomaly's promise, bankrolling the company's product development, which focuses heavily on managing the various hypervisors used both within enterprises and by cloud providers.

**CEO:** Richard Reiner, called out of semi-retirement to become Enomaly CEO this year. Most recently, Reiner was founder and CEO of Assurent, an SaaS company acquired by Telus in 2006.

**HOW ENOMALY GOT ITS START:** Enomaly was born five years ago as a consulting business, but later developed an open source management tool that runs on top of the Xen hypervisor. Enomaly dropped its consulting business for good last year to focus on cloud management software.

**WHO USES THE SERVICE:** More than two dozen customers have been named publicly, including Business Objects, France Telecom, NBC, the Canadian government, Deutsche Bank, Best Buy and several universities.

## COMPANY NAME: Google

**FOUNDED:** 1998

**LOCATION:** Mountain View, Calif.

**CLOUD OFFERING:** Google Apps, a set of online office productivity tools including e-mail, calendaring, word processing and a simple Web site creation tool; Postini, a set of e-mail and Web security services; and the Google App Engine, a platform-as-a-service offering that lets developers build applications and host them on Google's infrastructure.

**WHY WE'RE WATCHING IT:** No one knows the Internet quite like Google. While the company's main focus is crawling the Web and delivering advertising-supported search results, Google's foray into SaaS applications for businesses is hastening the industry's move from packaged software to Web-hosted services, and App Engine provides a credible alternative in the platform-as-a-service market.

**CEO:** Eric Schmidt, former CTO of Sun and former CEO of Novell, took the helm in 2001.

**HOW GOOGLE GOT INTO CLOUD COMPUTING:** Google Apps was the company's attempt to branch out beyond the consumer

search market and become a player in the enterprise. Google unveiled the enterprise version of Apps in February 2007 in a competitive strike against rival Microsoft, and followed up by releasing App Engine in April 2008.

**WHO USES THE SERVICE:** Lots of small businesses, enterprises and colleges including Arizona State University and Northwestern University.

## COMPANY NAME: GoGrid (a division of ServePath)

**LAUNCHED:** March 2008 (ServePath was founded in 2001, GoGrid development began in 2006)

**LOCATION:** San Francisco

**CLOUD OFFERING:** The GoGrid platform offers Web-based storage and the ability to quickly deploy Windows- and Linux-based virtual servers onto the cloud, with preinstalled software including Apache, PHP, Microsoft SQL and MySQL.

**WHY WE'RE WATCHING IT:** GoGrid, one of Amazon's chief competitors in the cloud storage and compute markets, distinguishes itself from Amazon in a couple ways. GoGrid offers Windows Server 2008 instances (Amazon offers only Windows Server 2003) and 100% uptime service-level agreements (Amazon offers 99.95% for compute and 99.9% for storage).

**CEO:** John Keagy, the CEO and founder of ServePath, built and sold several ISPs in the decade prior to starting ServePath.

**HOW GOGRID GOT ITS START:** Executives at ServePath, a dedicated server hosting company, created GoGrid after deciding that inefficiencies within the standard hosting model could be alleviated with a self-service, pay-as-you-go infrastructure.

**WHO USES THE SERVICE:** Mostly start-ups, Web 2.0 and SaaS companies, plus a few big names such as SAP and Novell who are running pilots or small test projects on the GoGrid service.

## COMPANY NAME: Microsoft

**FOUNDED:** 1975

**LOCATION:** Redmond, Wash.

**CLOUD OFFERING:** Azure, a Windows-as-a-service platform consisting of the operating system and developer services that can be used to build and enhance Web-hosted applications. Azure is in beta until the second half of 2009.

**WHY WE'RE WATCHING IT:** This is Microsoft's first big foray into the cloud. But for all of Microsoft's might, it is still a new player in the cloud market and has questions to answer. For example, will it be easy to move existing applications onto the Azure platform, and will Microsoft avoid the tendency toward vendor lock-in — which is bad for users but has been tremendously profitable for Microsoft in the world of packaged software?

**CEO:** Steve Ballmer, appointed CEO in 2000 after 20 years with the company.

**HOW MICROSOFT GOT INTO CLOUD COMPUTING:** Microsoft made its name by developing the operating system for home and work computers. But with all forms of applications moving to the Web-hosted model, it's no surprise Microsoft would make Windows available over the cloud. Microsoft also provides a set of business services over the Web, including Exchange, SharePoint, Office Communications Server, CRM and Live Meeting.

**WHO USES THE SERVICE:** Software companies Epicor, S3Edge and Micro Focus are among the early customers using Azure to develop cloud applications.



## COMPANY NAME: NetSuite

**FOUNDED:** 1998

**LOCATION:** San Mateo, Calif.

**CLOUD OFFERING:** A business software suite including e-commerce, CRM, accounting and ERP tools.

**WHY WE'RE WATCHING IT:** One of the industry's most successful online business software providers, NetSuite has a tendency to make competitive moves that are both entertaining and potentially profitable for customers. NetSuite recently promised 50% discounts to Sage Software customers who switch to NetSuite, and made a similar offer to Salesforce.com and SAP customers last year. NetSuite will even integrate with rivals' technology, for example by connecting its ERP suite to Salesforce's CRM tools, a move designed to lure Salesforce customers by enabling new business processes.

**CEO:** Zach Nelson, appointed in 2002 after holding executive positions at companies such as Oracle and Sun.

**HOW NETSUITE GOT ITS START:** NetSuite, originally called NetLedger, was founded by Oracle CEO Larry Ellison and NetSuite CTO Evan Goldberg to make Web-based applications for small businesses. NetSuite and Oracle had tight go-to-market partnerships in the company's early years but Ellison's official influence over the company has diminished since NetSuite went public late in 2007.

**WHO USES THE SERVICE:** Thousands of small business and enterprise customers worldwide including Wolfgang Puck Coffee, Wrigleyville Sports and Isuzu.

## COMPANY NAME: Rackspace

**FOUNDED:** 1998

**LOCATION:** San Antonio, Texas

**CLOUD OFFERING:** The Rackspace Cloud, also known as "Mosso," consists of three major services: Cloud sites, a platform for building Web sites; Cloud Files, a storage service; and Cloud Servers, an Amazon EC2-like service that provides access to virtualized server instances.

**WHY WE'RE WATCHING IT:** Rackspace has a long history of offering hosted data center services and is a trusted name in the enterprise. With Mosso, Rackspace is taking aim at the platform-as-a-service and infrastructure-as-a-service markets, the two key areas for customers looking to build Web-hosted applications.

**CEO:** Lanham Napier joined Rackspace as CFO in 2000 and became CEO in 2006.

**HOW RACKSPACE GOT INTO CLOUD COMPUTING:** Rackspace has always focused on providing dedicated, rather than shared, data center resources. That is, until a small team in the company said, "There has to be a better way for Web designers to build Web sites rather than getting a dedicated server" that requires extensive management, according to Rackspace CTO John Engates. With a multi-tenant cloud service, Rackspace can offer as-needed access to computing resources for one-off projects. "Cloud looks a lot like our business today; it's just changing how it's sold," Engates says.

**WHO USES THE SERVICE:** Web developers and SaaS providers such as Zaproved, which uses Mosso to deliver an online productivity tool.

## COMPANY NAME: RightScale

**FOUNDED:** 2006

**LOCATION:** Santa Barbara, Calif.

**Cloud offering:** The RightScale Platform, SaaS that helps customers manage the IT processes they have outsourced to

cloud providers such as Amazon and GoGrid. RightScale helps customers build and clone virtual servers for the cloud, performs load balancing in response to changing needs, automates storage backups, and offers monitoring and error reporting.

**WHY WE'RE WATCHING IT:** Because for all of the cloud's promises of simplicity, deploying virtual servers and applications in the cloud requires work on the part of the IT department, particularly if a customer is using multiple cloud services. RightScale is automating the grunt work required to use the cloud most effectively.

**CEO:** Michael Crandell, RightScale co-founder who was held executive positions at SaaS companies including eFax and Celebros.

**HOW RIGHTSCALE GOT ITS START:** Two of RightScale's three founders come from Citrix Online, including CTO Thorsten von Eicken, who decided that software providers shouldn't be burdened with the enormous task of building and maintaining data centers. Building data centers should be for "other people who have a core competency in that," he says. "I build SaaS services and there's no reason to go out and build a data center again."

**WHO USES THE SERVICE:** Social networking vendors and other companies that need help managing cloud-based servers, including Share-This, TagCow, Dolnk and iWidgets.

## COMPANY NAME: Salesforce.com

**FOUNDED:** 1999

**LOCATION:** San Francisco

**CLOUD OFFERING:** Salesforce.com's flagship is a set of CRM tools including salesforce automation, analytics, marketing and social networking tools. A second major offering is Force.com, a platform for building Web applications and hosting them on the Salesforce infrastructure.

**WHY WE'RE WATCHING IT:** Salesforce.com helped pioneer the SaaS market, which has now been lumped into the umbrella term "cloud computing." With Force.com, Salesforce is moving beyond SaaS into the platform-as-a-service market, which could revolutionize the way businesses build and deliver applications to users and customers.

**CEO:** Marc Benioff, also the founder and chairman of Salesforce.com, spent 13 years at Oracle in a variety of executive, sales and product development roles.

**HOW SALESFORCE.COM GOT ITS START:** Benioff founded Salesforce.com with the goal of creating an information management service that could replace traditional business software technology, the company says. Initial funding was provided by investors including Oracle CEO Larry Ellison.

**WHO USES THE SERVICE:** 55,400 customers in many industries including financial services, communications and media, energy, healthcare and retail.

### Go online for Cloud Computing FAQ:

What is cloud computing? How is it different from SaaS? What's the difference between public and private clouds? All of these questions and more are answered by Senior Editor Jon Brodtkin.

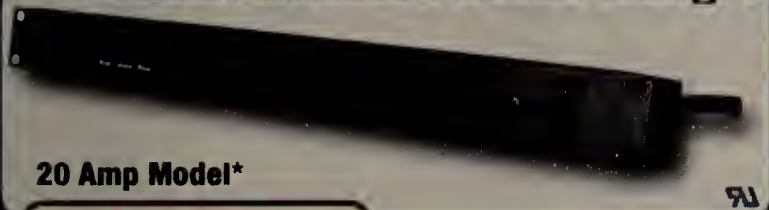
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### Q. How can I make sure my data is safe?

A. Data safety in the cloud is not a trivial concern. Online storage vendors such as The Linkup and Carbonite have lost data, and were unable to recover it for customers. Secondly, there is the danger that sensitive data could fall into the wrong hands. Before signing up with any cloud vendor, customers should demand information about data security practices, scrutinize service-level agreements, and make sure they have the ability to encrypt data both in transit and at rest.



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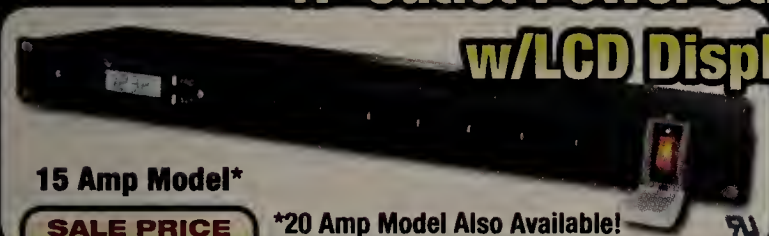


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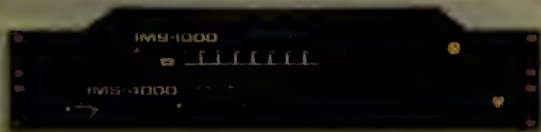
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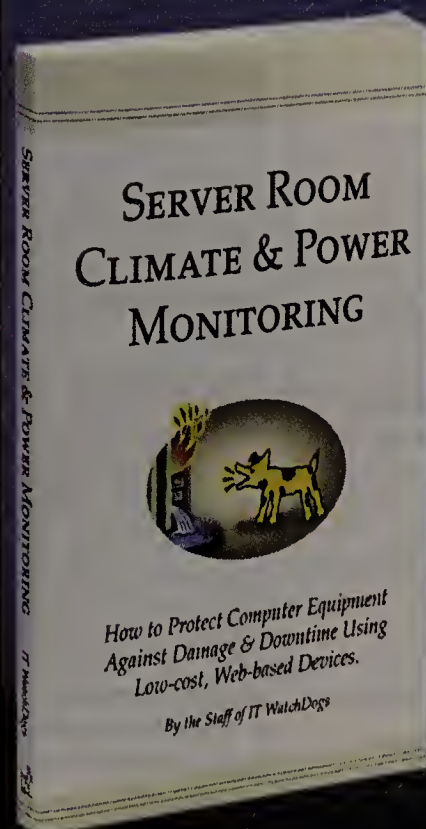


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### TO SEND E-MAIL TO NW STAFF

firstname\_lastname@nww.com

CEO: Mike Friedenberg  
SVP, Chief Content Officer: John Gallant  
Group Publisher: Bob Melk  
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### ONLINE SERVICES

VP/Sales: Brian Glynn  
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## Sales

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(201) 634-2300/FAX: (201) 634-9286

### Southeast/Mid-Atlantic

Jacqui DiBianca, Regional Account Director  
(610) 971-0808/FAX: (201) 621-5095

### Northern California/Northwest

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### Silicon Valley/Southwest

Coretta Wright, Regional Account Director  
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### Marketplace/Emerging Markets - National

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## BACKSPIN

Mark Gibbs

# Willful technological ignorance

A few weeks ago I came across a neat piece of public relations fluff by GE. This is part of the company's "Smart Grid" campaign, a catch-all program for promoting GE's smart power meters, alternative energy products and power management technologies.

If you go to the company's Web site (<http://tinyurl.com/cjw568>) you will experience a truly slick Flash-based presentation, and the

piece of fluff can be found on the right side of the home page: a proposal to "see a digital hologram of Smart Grid technology come to life in your hands."

Click on the link and you'll be given instructions; all you need is a Webcam and a printer. You print a PDF that displays a diagrammatic solar panel then click on either "Launch Wind Turbine" or "Launch Solar Energy" and hold the printout with the diagram facing the camera.

If the gods of demos smile upon you, on your screen you will see a real-time video image of you holding the printout with an apparently 3D, animated model sticking out of the paper. As you move the paper the model will also move so that, within limits, you can pan and zoom around the simulation. It is, without doubt, really, really cool.

But here's the thing: GE refers to this as a "digital hologram." Now, according to Merriam Webster Online, a hologram is "a three-dimensional image reproduced from a pattern of interference produced by a split coherent beam of radiation (as [from] a laser)." In other words, the GE presentation is not a hologram at all. It is "augmented reality."

I must digress and note that augmented reality has been around for a long time, mainly in the field of virtual reality. Most recently I've seen a couple of augmented reality applications on the G1 mobile phone.

The first of these was Mobilizy's Wikitude (<http://tinyurl.com/5z8b23>), which overlays the real-time image from the camera with labels indi-

cating the points of interest in the direction the camera is pointing. Amazingly cool.

Another augmented reality application on the G1 was the recently released Google Sky Map (<http://tinyurl.com/q8hs9o>). This software displays a diagram on the G1's screen of the planets, stars and constellations that should be visible behind the phone as you move it around.

Anyway, GE has been throwing around the term "digital hologram" with wild abandon and I have yet to see anyone take them to task for using the term incorrectly.

Does it matter? I think it does because it is an example of how being willfully ignorant about technology makes us all a little dumber.

Take defibrillation. If you believe what you see on the TV show "House", a person's heart stops and whap! One or two jolts and no more flat line. The reality is that defibrillation is only, at best and under ideal circumstances, about 74% successful.

When we make stuff up for the sake of marketing hyperbole or entertainment, then tens of thousands of children and uneducated adults accept these erroneous terms and ideas as if they were the truth.

Is it any wonder that lawmakers so often make such whopping gaffs when they try to write legislation that involves anything to do with technology, and that most of their constituents let them get away with it? None of them know better!

This kind of mangling of how we understand technology just holds our society back and keeps us collectively slightly dumber than we ought to be. It may well keep us entertained but would we be less entertained, informed or persuaded to buy if all of this needless and pointless inaccuracy, this willful ignorance about technology was missing?

*Gibbs tries to be accurate in Ventura, Calif. Tell him your margin of error at [backspin@gibbs.com](mailto:backspin@gibbs.com).*



Paul McNamara

## NETBUZZ

News, Insights, oddities

# Google ran out of bandwidth? ... Google?

For a while there a few days ago it seemed to some as though the Google Chrome browser development team had proven again that no matter how much bandwidth is made available, someone, somewhere, for some reason, is going to need or want more.

Instead, what really occurred was a both an innocent failure to communicate and yet another lesson in the risks — I use the term loosely — that can come with freewheeling

corporate blogging.

Here's what was posted to the Google Chrome Releases blog by Program Manager Mark Larsen: "We were not able to issue a Dev channel release this week. Our test team did a great job in qualifying two Stable updates and a Beta update this week, and we just didn't have the bandwidth to push a Dev channel release. We'll get an update out early next week. Stay tuned for some exciting new features we hope to land in the Dev channel."

Which prompted a blogger for another trade publication to write: "It sounds like there isn't going to be a dev channel release of Chrome this week — simply because they've already updated the stable, and beta channels this week, and simply can't do any more because they ran out of bandwidth. ... You wouldn't think bandwidth at Google would be an issue, but it sounds like it can be."

Which prompted an industry analyst to send me the link to that post and a message noting: "I thought this was pretty funny — Google running out of bandwidth."

By which time the Google-sucked-up-all-its-bandwidth report had been picked up by a bunch of other bloggers and news sites, both domestic and foreign, all of whom seemed convinced that those

Google code jockeys had overstuffed the pipes.

Now one can only imagine the fallout were such a Google bandwidth crisis actually true. Service providers would be rushing out press releases touting the depletion as proof positive of the need for bandwidth caps. A congressman might smell a headline opportunity. Heck, Wall Street might wonder if the recession had hamstrung Google's entire R&D operation. ... Bailout?

But, alas, the facts again get in the way of a great story:

Google's Larsen updated the blog post last Monday: "[Edit, 11 May 2009: Change 'bandwidth' to 'test capacity'. Sometimes the colloquial jargon we use at work translates imprecisely for a public audience.]"

Ah, test capacity ... colloquial "bandwidth," not real bandwidth. Well, it's still kind of interesting to learn that even at Google — \$129 billion Google — certain resources remain finite.

## What does security software have to do with swine flu?

Right, absolutely nothing. Yet that lack of any connection did not deter CyberArk Software from sending us a press release with this headline: "CyberArk's security helps keep Swine Flu under control."

Uh, how's that? Well, it seems that medical professionals would be incapable of communicating with one another and transferring sensitive patient data electronically without the sense of security offered by this vendor's products.

And we would all have swine flu by now. (I'll bet you were wondering why all the hysteria seems to have died down.)

Of course, vendors are always trying to attach their wares to the news of the day; we're used to that sort of thing around here.

But usually there's at least a germ of a connection.

*You may connect with me via the usual channel: [buzz@nww.com](mailto:buzz@nww.com).*



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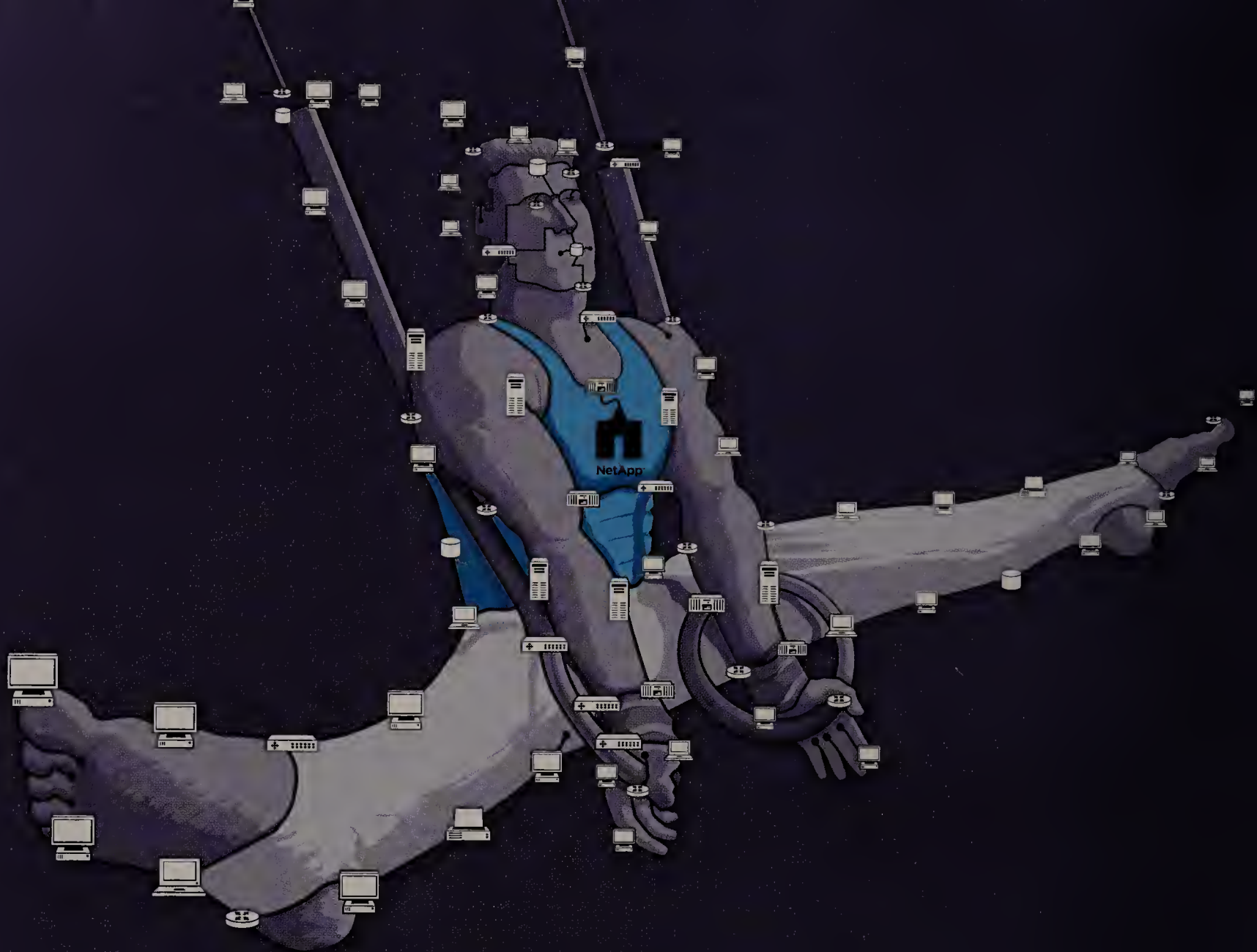


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